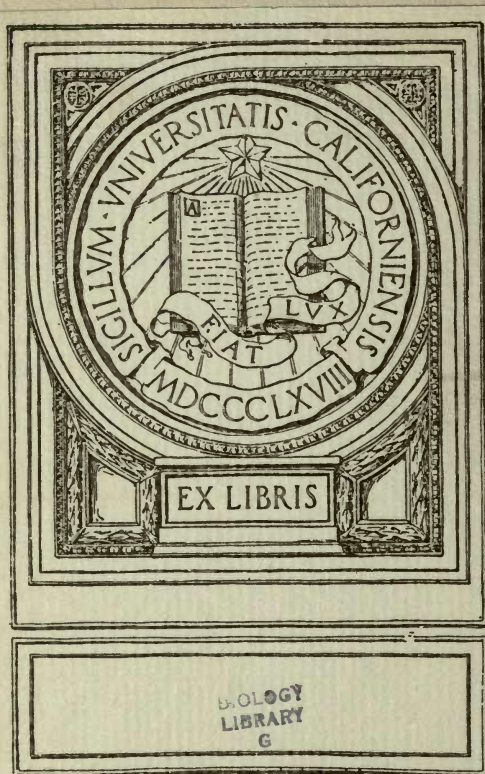


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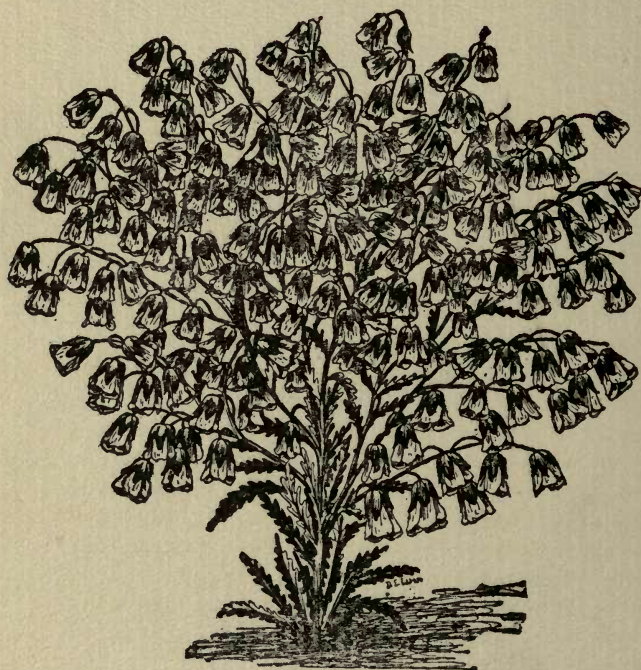
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UNIV. OF
CALIFORNIA

AMERICAN PLANTS

VOLUME TWO

1909

CONTENTS:

[OF VOLUMES ONE AND TWO]

BOTANY OF SOUTHERN CALIFORNIA

Abbreviations used arbitrarily in this work, pages 372, 411.

Algæ credited to the coast of California, Anderson, Cleveland, Snyder, 392.

Alphabetical index—chiefly of Californian plants, 445.

Among the wild flowers of San Diego, James S. Lippincott, 401.

Analytical key to families represented in California, 385.

Goniferous trees and shrubbery of San Diego county. 404.

Descriptions of genera, species and varieties credited to South California.

Glossary of some botanical terms used in this work, 375.

Grasses—descriptions of some western species, 411.

Lichens—species occurring in West America, 240, 367, 400.

Plant identification, 375.

Some native flowering shrubs, 408.

Charles Russell Orcutt, Editor.

San Diego, California.

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TO MY PARENTS

Heman Chandler Orcutt

and

Eliza Eastin Gray-Orcutt

and to

Former Friends and Correspondents

Engelmann: Gray: Parry: Vasey: Watson

Names Inseparable from American Plants

This Volume is Dedicated

In Memoriam.

TO MY FRIENDS

Herman Chandler O'Connell

and

Miss Maria O'Connell

and to

former friends and correspondents

Bergmann; Gray; Henry; Watson

Name-Listed from American Friends

This Volume is Dedicated

in Remembrance

PREFACE.

With the completion of volume two of American Plants, the editor may perhaps be pardoned for presenting a few words regarding the plan and reason for producing the work.

The plan was to index every work of importance on West American botany, and to print a description of every genus, species, variety or form credited to the state of California. As far as possible it was desired to reprint in each case the earliest published description, not only of species generally considered valid, but also of those published that have since been relegated to synonymy—however remote might be the chances of reviving to specific rank.

It was also desired to collect all scattered notes, supplemental to the original descriptions, or pertaining to geographical distribution, economic value, synonymy, citing place of publication or the authority for each.

Volumes one and two were intended to cover these features for the flora of the southern counties, but the reader will still find the ideal far from realized. Many works yet remain to be consulted and many species must be added to the enumeration here given. The editor hopes to continue until all that has been published relative to the California flora is fully indexed, and all valid species described. Nearly half the work is now published, and much of the balance is in MS.

May the errors of omission or commission in this volume be corrected in the next.

BIBLIOGRAPHICAL: The following literature has been accessible to the writer, and indexed wholly or in part.

The abbreviations used to designate the same precede the titles.

A=**ORCUTT**, Charles Russell: American Plants. Volume 1. 1907-1908. Indexed, except where matter is herein incorporated.

Ab=**ABRAMS**, Le Roy: Flora of Los Angeles and vicinity. 1904, 475 p. Index incorporated but not verified, thus indicating nomenclature as adopted by him, and species occurring in the territory covered by him.

B=**BREWER**, W H., and **WATSON**, Sereno: Botany (uniform with the publications of the Geological Survey of California). Volume 1. 1876 (second revised edition, 1880, only accessible to the writer). Gamopetalae, by Asa Gray; Cactaceae, by George Engelmann. Volume 2, 1880. By Sereno Watson. Portions treated by George Engelmann (oaks, pines, etc.), M. S. Bebb (willows), William Boott (Carices), George Thurber (grasses), and Daniel C. Eaton (ferns, etc.). Index incorporated but not verified.

Cov=**COVILLE**, Frederick Vernon: Botany of the Death Valley Expedition. CNH, IV, 1893.

CNH=**CONTRIBUTIONS** from the United States National Herbarium.

Cur=**CURREN**, Mrs. Mary K.: California academy bulletin (when other reference is not given).

Da=**DAVIDSON**, Anstruther: List of plants of Los Angeles county, Cal. (1896) 20 p. Indexed, showing nomenclature adopted at that date, and species then known from that county.

DC=**DE CANDOLLE**, A. P. et Alph.: Prodromus naturalis regni vegetabilis. Paris, 1824-73 (when other reference is not given).

E=**ENGELMANN**, George: Botanical works, collected for Henry Shaw, 1887 (when other reference is not given).

G=**GRAY**, Asa: American academy proceedings (when other reference is not given).

K=**KELLOGG**, Albert: California academy proceedings, series 1 (when other reference is not given).

M=**MUELENBERGIA**: a journal of botany, edited by A. Arthur Heller. Volume 1, 1900-1906. Index incorporated but not verified. Mainly western species, except for a list of Porto Rican fungi.

P=**GREENE**, Edward Lee: Pittonia, vol. 1, 1887-1889. Volume 2, 1889-1892. Volume 3. 1896-1898. Volume 4. 1899-

1901. Volume 5. 1902-1905. Indexed, except 1:179-194. Many species not West American.

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Z=**ZOE**: a biological journal. Volume 1. 1890-1. Volume 2. 1891-2. Volume 3. 1892-3. Volume 4. 1893-4. Volume 5. 1900-5, 226 p.

IK=**HOOKER**, Joseph D, et **JACKSON**, B. Daydon: Index Kewensis. 1893. 4 volumes.

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T=**TORREY**, John:

Bth=**BENTHAN**, George: Plantae Hartwegianae. 1839-57.

Nutt=**NUTTALL**, Thomas.

GEN-era of North American plants and a catalogue of species to the year 1817. Phila. 1818.

GAM=Description of plants collected by William Gamble in the Rocky mountains and upper California. (In Phila ac nat sci J, sr 2, 1:149-189, 1847-50).

SYL=North American Sylva. 1842-3.

ABBREVIATIONS and SIGNS used:

See also American Plants 1:372.

axy=**axillary**, occurring in an axil.

cap=**capsule**.

com=**common**, commonly, usually.

d=**described** or description.

fdr=**first** published & reprinted.

glab=**Glabrous**, smooth, not hairy.

glau=**glaucous**, covered with a bloom.

hi=**high**.

lg=**long**.

mem=**membranaceous**, thin and soft, like a membrane.

nar=**narrow**.

num=**numerous**.

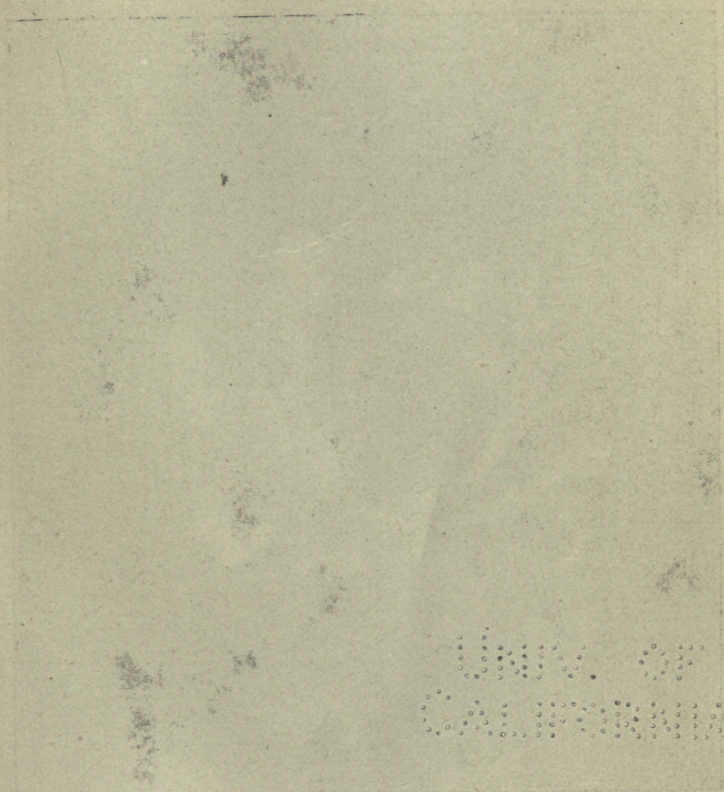
pap=**pappus**, the bristles, scales, etc., at the apex of the akenes in the Compos- itae.

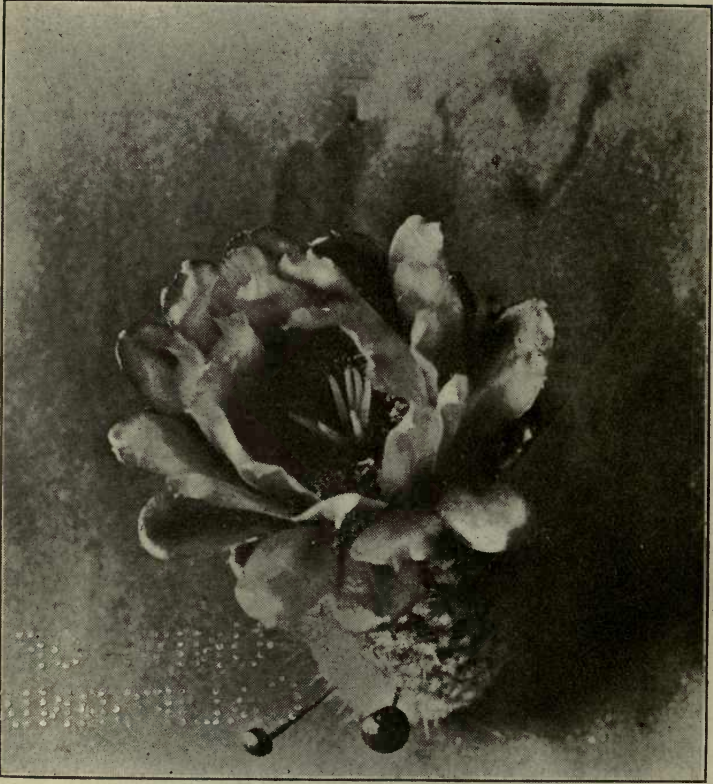
seg=**segment**, a subdivision or lobe.

sh=**short**.

sm=**small**.

°=**feet**. "=**inches**. "-**lines**.





CEREUS ORCUTTI

ANALYTICAL KEY.

Calyx & cor of either more or less than 6 parts, Exogens.

Calyx & cor together of just 6 parts, petals never 5, stamens 3 or 6—or many with 3 green sepals—or 1 or 2 united to the style with inferior ovary, Endogens.

POLYPETALE—calyx & cor both present, the cor of separate pet.

A—stamens ∞ , at least more than 10 & more than twice the number of pet.

1—hypogynous (i.e. on the receptacle free from the ovary & calyx.

*pistils few—many distinct carpels or 1 rare. a—calyx mostly deciduous; juice of herbage colorless—Ranunculaceae

b—calyx early deciduous, juice yⁱsh—Platystemon

**pistil of 1 carpel forming a pod—Acacia

***pistil compound, cells, placenta, or stigmas more than 1, a—pet more numerous than sep—twice as many (4 r6), & both usually caducous Papaveraceae

—5-16 & more numerous than the persistent sep Portulacaceae

b—pet of same number as sep

—4 & both deciduous.....Capparidaceae

—4 or less, but cleft, & calyx persistent—Resadaceae

—5 & calyx persistent, sep valvate in bud, stamens monadelphous Malvaceae

sep imbricated in the bud

—lvs opp, entire, pellucid-punctate Hypericaceae

—lvs alt, not punctate, plane

—cor ephemeral: 2 outer sep small & bract-like.....Cistaceae

—cor gamopetalous, tubular: sep round Fouquieria

2—perigynous or epigynous, borne on the (either free or adnate) calyx

*Fleshy plants

Leafless mostly prickly fleshy plants: ovary 1-celled. Cactaceae.

Leafy fleshy plants, with 3 or more cells to ovary. Ficoideae.

Leafy fleshy herbs, with 1-celled ovary. Portulacaceae.

**Not fleshy.

a—lvs opp, simple

sep & pet ∞Calycanthaceae

—4 or 5.....Saxifragaceae

z. Lvs alt with stipules. Rosaceae.

b. Lvs alt without stipules.

Carpels 2 or more, superior, becoming follicles. Crossosoma.

Ovary inferior with 3 or more parietal placentae

—Fls mainly dioecious: pet minute or none. Datisceae.

—Fls perfect; pet conspicuous; lvs rough. Lcasaceae.

B. Stamens 10 or less, or if more not exceeding twice the number of the petals, or sep when the pet are wanting.

—1. Ovary or ovaries superior or mainly so (but sometimes enclosed in the calyx tube).

†pistils more than 1 & distinct

*pistils of same number as pet & as sep.

Lvs simple, fleshy. Crassulaceae.

Lvs pinate (styles partly united). Lim-

nanthes.

* * Pistils not corresponding in number with pet or sep.

a. Sta borne on receptacle—Ranunculaceae

b. Stamens borne on the calyx.

Stipules persistent: lvs alt. Rosaceae.

Stipules caducous: lvs opp, compound.

Staphylea.

Stipules none or distinct. Saxifragaceae.

††pistil 1.

* * Simple, i. e., of 1 carpel, as shown by the single style, stigma and cell (the latter sometimes with a false division in Astragalus).

Anthers opening by uplifted valves or transversely—Berberidaceae

Anth opening lengthwise or at the top.

a legume. Leguminosae.

a. Fls irregular lvs simple. Polygalaceae.

c. Fls regular.

Lvs opp, punctate.....Cneoridium

Lvs alt, not punctate, mostly stipulate.

—Fr a drupe or akene. Rosaceae.

—Fr a coriaceous follicle. Glossopetalon.

* * Pistil compound as shown by the number of cells or placentae, styles or stigmas.

a. Ovary 1-celled, with (2-4 or rarely more parietal placentae.

Pet (long-clawed) and teeth of long tubular calyx 4 or 5. Frankeniaceae.

Pet and sep or lobes of the cleft calyx 5.

—Cor irregular; lower pet spurred. Violaceae.

—Cor regular or nearly so.

-- Styles or sessile stigmas entire. Saxifragaceae.

-- Styles 3, each 2-parted: placentae 3. Droseraceae.

Pet 2, but persistent sep 4; fl irregular. Resadaceae.

Pet 4, but bract like sep 2; fl irregular. Fumariaceae.

Pet 4 or 6, sep $\frac{1}{2}$ as many caducous. Papaveraceae.

Pet 4, sep 4; stamens 6. Capparidaceae.

b. Ovary and pod 2-celled: 2 placentae parietal: stamens tetradynamous. Cruciferae.

c. Ovary and capsule 1-celled, several to many seeded on a central placenta.

Truly so, the partitions wanting or very incomplete.

—Sep 2: lvs often alt. Portulacaceae.

—Sep or calyx-lobes 5, or sometimes 4: lvs all opp. Caryophyllaceae. (See also the apetalous Glaux.)

Apparently so; the partitions at length vanishing.

—Stipules between the opp lvs. Elatina-ceae

—No stipules. Lythraceae.

d. Ovary and fr 1-celled with a single sd on a stalk from the base.

Shrubs: styles or stigmas 3: fr drupe-like. Anacardiaceae.

—Style at most 2-cleft: stipules scarious. Illecebraceae.

—Stipules 5: calyx scarious. Plumbagina-ceae.

e. Ovary more than 1-celled: sds attached to the axis, or base, or summit.

Fls very irregular: ovary 2-celled: cells 1-sd'ed. Polygalaceae.

Fls regular or nearly so.

—No green foliage. Monotropeae in Eri-
caceae.

—Foliage pellucid-punctate.

Rutaceae

—Stamens as many as the pet and opp
them, i. e. alt with the calyx-lobes.

These small or obsolete: pet valvate.
Vitaceae.

—Stamens when just as many as the
pet alt with them.

Strong-scented shrub: lvs opp, 2-foliate.
Zygophyllaceae.

Strong-scented herbs: los lobed or com-
pound. Geraniaceae.

Herbs not strong scented

—Ovules 1-4 in each cell.

Lvs all simple and entire. Linaceae.

Lvs all opp, the latter with divisions or
lfts not entire. Geraniaceae.

—Ovules numerous.

—Stamens on the calyx: style 1. Lyth-
raceae.

—Stamens on the receptacle: los opp,
simple.

Cells of the ovary as many as the sep,
2 or 5. Elatinaceae.

Cells fewer than the sep, 3. Mollugo.

Shrubs on trees with opp simple lvs.

—Pinnately veined, not lobed. Celastra-
ceae.

—Palmately veined, lobed. Sapindaceae.

Shrubs or trees with alt lobed lvs. Ster-
culiaceae.

2. Ovary and fr inferior or mainly so.

Tendril-bearing herbs: fls monaëciou or
diæciou. Cucurbitaceae.

Shrubs or herbs, not tendril-bearing nor
diæciou, nor umbelliferous.

* Stamens as many as the small unguicu-
late pet and opp them: calyx valvate.
Rhamnaceae.

* Stamens if of the number of the pet
alt with them.

a. Styles 2-5, distinct or united below.

Fr a many-seeded (or rarely 3-5-celled,
3-5-seeded) capsule. Saxifragaceae.

Fr a 1-celled many-seeded berry. Ribes.

b. Style 1, undivided: stigmas 1-4.

—Fls in cymes or a glomerate cluster.
Corræaceae.

—Fls racemose, spicate, or axillary.

—Ovary 1-celled: herbage scabrous.
Loasaceae.

—Ovary 2-5, mostly 4-celled. Onagra-
ceae.

Herbs: fls in umbels: styles 2: fr dry.
Umbelliferae.

Herbs or shrubs: fls in umbels: styles 4
or 5: fr berry-like. Araliaceae.

GAMOPETALAE: petals more or less
united into 1 piece.

A. Ovary inferior, or at least largely so.

* Stamens more numerous than the lobes
of the cor, 8 or 10.

Distinct and free from it or nearly so.
Ericaceae.

Monadelphous on its tube. Styracaceae.

* Stamens as many as the lobes of the
cor (5 or rarely 4), syngenesious.

Fls in an involucre head. Composi-
tae.

Fls separate, racemose or spicate. Lo-

beliaceae.

*** Stamens as many as the cor-lobes, or
at least 4, distinct.

a. Nearly or quite free from cor: los alt:
no stipules.

Stamens distinct. Campanulaceae.

Stamens more or less united. Nema-
cladus.

b Inserted on the cor: lvs opp or
whorled, with stipules or else in

whorles, quite entire. Rubiaceae.

Without stipules, opp. Caprifoliaceae.

*** Stamens only 3, fewer than the
lobes of the cor.

Lvs opp: stamens distinct. Valerian-
aceae.

Lvs alt: stamens often united. Cucur-
bitaceae.

B. Ovary superior (free) or mainly so.

1. Stamens more numerous than the
lobes of the cor.

Pistil 1, simple: lvs compound. Legum-
inosae.

Pistils several, simple: lvs simple, fleshy.
Crassulaceae.

Pistil compound with 3 styles. Fouqui-
era.

Pistil compound with 1 undivided style.

—Ovary 3-10-celled: stamens distinct.
Ericaceae.

—Ovary partly or at length 1-celled: sta-
mens monadelphous. Styracaceae.

2. Stamens as many as the divisions
of the cor and opp them.

Styles 5: ovary and fr 1-seeded. Plum-
baginaceae.

Style 1: ovary and capsule several to
many-seeded. Primulaceae.

3. Stamens as many as the lobes of the
cor and alternate with them, or fewer.

* No green herbage.

cor regular.

Stamens free: seeds very many, minute.
Monotropeae.

Stamens in its throat: fr 10-20-celled.
Lentaceae.

Stamens on the tube: fr 2-celled. Cus-
cuta.

Cor irregular. Orobanchaceae.

*** With ordinary green herbage.

* Cor regular or nearly so: stamens not
didynamous.

Cor scarious and veinless: stemless
herbs. Plantaginaceae.

Cor more or less veiny.

—Stamens 2 or 3, but parts of the cor
4 or 5. Oleaceae.

—Stamens sometimes 5, sometimes 4, as
many as the cor-lobes.

—Pollen in solid waxy masses: fr a
pair of follicles. Asclepiadaceae.

—Pollen in powdery grains.

Ovaries 2: fr a pair of follicles. Apocyn-
aceae.

Ovary 4-lobed, forming 4 separate or
separable seed-like nutlets. Borragin-
aceae.

Ovary single and entire.

—Style 3-cleft at apex: capsule 3-seeded:
cor convolute. Polemoniaceae.

—Style or stigmas 2 or 1.

Ovules and seeds at most 4, large, with
large embryo and little or no albumen:

peduncles axillary. Convolvulaceae.

Ovules few or numerous: embryo small,

in albumen.

—Lvs opp or whorled and entire: capsule 1-celled: cor convolute in the bud. Gentianaceae.

—Lvs various, mainly alt.

Styles 2, or 1 and 2-cleft: capsule 1-2-celled. Hydrophyllaceae.

Style 1: stigma usually 1: capsule or berry 2-celled, many-seeded. Solanaceae (See also Verbascum and Limosella).

Cor irregular: stamens (with anthers) only 4 and didynamous, or 2: style 1.

a. Ovary and capsule 2-celled, few to many-seeded.

Seeds small, mostly indefinite: embryo small in copious albumen. Scrophulariaceae.

Seeds larger in proportion, filled by the flat embryo.

—Numerous in a long capsule, winged, on a partition which separates from the valves. Bignoniaceae.

—Few, on hooked processes of placenta. Acanthaceae.

b. Ovary and capsule 1-celled, with many-seeded placentae in the axis. Lentibulariaceae.

c. Ovary 4-parted, in fr as many seed-like nutlets. Labiatae.

d. Ovary undivided: fr splitting into 2 or 4 1-seeded nutlets (or berry like with as many stones). Verbenaceae.

APETALAE: cor (and sometimes calyx) wanting.

A. Fls not in aments.

1. Ovary and fr superior, 1-celled and 1-ovuled, or carpels distinct if more than one.

Stipules sheathing the stem at the nodes.

—Trees: fls monaecious in globose heads: calyx none. Platanaceae.

—Herbs: calyx usually cor-like: akene triangular or lenticular. Polygonaceae.

Stipules not sheathing the stem or none.

* Shrubs or trees.

Lvs alt: fls perfect.

—Calyx 6-parted: fr a drupe. Lauraceae.

—Calyx tubular: fr an akene. Cerocar-pus.

Lvs alt: fls unisexual: fr a utricle. Chenopodiaceae

Lvs opp.

—Fls monaecious: capsule 1-celled by abortion. Buxaceae.

—Fr an akene: lvs small and narrow. Coleogyne.

—Fr a simple samara. lvs pinnate. Fraxinus.

* Herbaceous, or sometimes woody at base.

a. Fr a utricle: sd lenticular: embryo annular or spiral.

Fls with scarious persistent sep and bracts: no stipules. Amarantaceae.

Bracts herbaceous or none: no stipules. Chenopodiaceae.

Stipules scarious. Illecebraceae.

b. Fr a more or less triangular akene: embryo curved.

Fls perfect, on jointed pedicels, involu- crate. Polygonaceae.

c. Akene not triangular: embryo straight. Fls unisexual: fl incurved in the bud: lvs simple. Urticaceae.

Submerged: fls axillary, naked: lvs sessile, filiformly dissected. Ceratophyllaceae
Carpels several and distinct, 1-several-ovuled: calyx usually cor-like. Ranunculaceae.

2, as in 1, but ovary and fr inclosed by the calyx and apparently inferior.

* Shrubs: lvs opp. Elaeagnaceae.

* Herbs: calyx cor-like: fr an akene. Lvs simple, opp, entire. Nyctaginaceae.

Lvs compound, alt. Rosaceae.

3. Ovary and fr superior, of 2 or more carpels.

* Fr 2-4-celled, usually lobed: cells 1-2-ovuled.

Fleshy maritime dioecious shrub: ovaries 4-celled, coherent. Batideae.

Capsule 3-celled, 3-lobed: juice milky. Euphorbiaceae.

Fr 4-celled, 4-lobed, compressed, indehiscent: styles 2: small, aquatic, with opp entire lvs. Callitrichaceae.

Fr fleshy, 3-celled, 3-lobed: shrubs with simple alt lvs. Rhamnaceae.

Fr a double samara: trees with opp pinnate lvs. Sapindaceae.

Herb: small obcompressed pod. Lepidium.

* Fr cap ular, 1-celled or more, several ovuled.

Fls naked, crowded in an involucrate spike: pungent herb with entire lvs. Piperaceae.

Shrubs with y axillary fls. Sterculiaceae.

Low herbs with opposite lvs.

—Capsule 3-5-celled succulent. Ficoideae.

—Capsule 1-celled: placentae central.

—Style and stigma 1. Glaux.

—Styles and stigmas 3 or more Caryophyllaceae.

4. Ovary and fr inferior.

* Fr many-seeded.

Capsule 4-celled. Ludwigia.

Capsule 1-celled with 3 parietal placentae. Datisceae.

—With 2 parietal placentae, lvs cordate. Saxifragaceae.

* Fr mostly 1-seeded.

Dioecious parasites on trees. Lorantheae.

Aquatic herbs. Haloragae.

B. Fls unisexual, at least the staminate in aments. Trees or shrubs with alternate lvs.

a. Ovary inferior: male fls in aments, female solitary or few.

—Lvs pinnate without stipules. Juglandaceae.

—Lvs simple, with caducous stipules.

—Nut in a cup-like or spiny involucre. Cupuliferae.

—Nut in a foliaceous or tubular envelope. Corylaceae.

b. Ovary inferior: male fls in aments, female solitary or few.

Fr a 1-seeded nut.

—Nut winged or angled. Betulaceae.

Fr a many-seeded capsule. Salicaceae.

GYMNOSPERMAE: Ovules naked upon a scale or bract or within a more or less open perianth. Monaecious or dioecious trees or shrubs.

a. Male fls in aments: female subsolitary, the ovule within a double coriaceous integument with small terminal orifice: nearly naked dioecious shrubs.

Gnetaceae.

b. Fls dioecious, solitary, axillary; ovule becoming a bony sd within a fleshy envelope or cup. Taxaceae.

c. Female fls in aments becoming dry cones or berry-like; ovules naked at the base of a scale. Coniferae.

Class II, MONOCOTYLEDONS.

Woody fibres of the stem scattered irregularly. Usually with the parts of the fls in threes and lvs parallel-veined. Cotyledon simple. Mostly herbaceous.

A. Ovary inferior; perianth conspicuous, colored; perennials.

Aquatic: fls dioecious. Hydrocharidaceae.

Terrestrial: fls perfect.

a. Fls irregular. Orchidaceae.

b. Fls regular; stamens 3. Iridaceae.

c. Fls regular; stamens 6. Amaryllidaceae.

B. Ovary superior or nearly so; perianth regular or none.

* Carpels united into a compound ovary; perianth cor-like rarely partly herbaceous; seed albuminous.

a. Fls not upon a spadix.

Terrestrial: stems from a bulb, corm or rhizome; anthers 2-celled. Liliaceae.

Woody climber with tendrils; anthers 1-celled. Smilacaceae.

Submerged aquatic, with linear grass-like lvs. Pontederiaceae.

b. Fls crowded upon a spadix, fr fleshy and coalescent, 2-celled. Araceae.

** Carpels distinct (or separable) or solitary; aquatic or marsh herbs.

a. Perianth 0; fr utricular or nut-like; sds albuminous.

—Fls monaecious in heads or on a crowded spadix; lvs linear. Typhaceae.

—Small floating disk-like plants. Lemnaceae.

b. Perianth herbaceous, petaloid or 0; albumen 0.

Carpels few. Naiadaceae.

Carpels numerous in a whorl or hd. Alismaceae.

*** Perianth of 6 similar glumaceous segments; capsule 3-valved: rushes or sedge-like. Juncaceae.

Perianth coriaceous in 2 dissimilar series; fruit a berry or drupe. Palmae.

Fls in the axils of scales or glumes, spicate, without evident perianth.

—Stems solid; sheaths closed; scales single; anthers basifixed. Cyperaceae.

—Culms hollow, terete; sheaths split; glumes in pairs; anthers versatile. Gramineae.

CRYPTOGAMUS PLANTS.

Fls without stamens or pistils, and not producing sds with an envelope.

ACROGENS: Plants growing from the apex, and mostly with distinct lvs.

VASCULAR ACROGENS—plants with both woody and vascular tissue.

A. Spores only of one kind.

Cylindric jointed leafless plants with toothed sheaths: fr in a terminal spike. Equisetaceae.

Fronds circinate in veneration: sporangia globose, coriaceous, in a spike or panicle. Ophioglossaceae.

Fronds circinate in veneration: fr on under surface. Filices.

B. Spores of 2 kinds.

Fructification within the base of lvs or in their axils. Selaginelleae.

Spores contained within peduncled capsules borne by the rhizomes. Marsiliaceae.

Floating fronds small, pinnately branched: spores at the base. Salviniaceae.

CELLULAR ACROGENS—plants with cellular tissue only. Mosses.

ALGAE.

The following list of California Algae is based chiefly on a list of species occurring on the coast of San Diego county, prepared by Daniel Cleveland, supplemented by Mrs. Mary S. Snyder, as published in the West American Scientist, volume 10; and on a "List of California marine algae, "with notes," by C. L. Anderson, in Zoe 2:217-225. W=West American Scientist. Z=Zoe.

AGARDHIELLA.

A. COULTEI Harv. w 10:160.

AGARUM.

A. TURNERI Post & Rupr. Z 2:220.

AHNFELDTIA.

A. CONCINNA J. Ag. w 10:160.

A. GIGARTINOIDES Ag. Z 2:222. w 10:160 as A. concinna.

A. FLICATA Fr. w 10:160. Z 2:223.

ALAEIA.

A. ESCULENTA Grev. Z 2:220.

A. FISTULOSA Post & Rupr. Z 2:220.

A. MARGINATA Post & Rupr. Z 2:220.

AMHIROA.

A. ASPERGILLUM J. E. Gray, w 10:160. Z 2:225.

A. CRETACEA w 10:161.

A. NODULOSA Kutz. w 10:161.

A. OBIGNIANA Harv. w 10:161. Z 2:225.

A. VERTEBRALIS Dene. Z 2:225.

ANDERSONELLA.

A. FARLOWII Schmitz. w 10:161.

ANTITHAMNION.

A. FLOCCOSUM var. Pacificum Harv. w 10:161.

ARTHROCLADIA.

A. —? w 10:161.

ASPEROCOCCUS.

A. SINUOSUS Bory. Z 2:220. w 10:161 as Colpomenia sinuosa Derb & Sol.

BANGIA.

B. FUSCO-PURPUREA Syng. w 10:161.

B. VERMICULARIS Harv. Z 2:221.

BOSTRYCHIA.

B. CALAMISTRATA Mont. Z 2:225.

B. RIVULARIS Harv. Z 2:225.

B. TUTOMYI Harv. Z 2:225.

BRYOPSIS.

B. PLUMOSA Lmx. w 10:161. Z 2:218.

CALLITHAMNION.

C. AMERICANUM Harv. w 10:161.

C. ARBUSCULA.

Variety PACIFICUM Harv. Z 2:222.

C. DASYOIDES Ag. w 10:161. Z 2:222.

C. FLOCCOSUM Ag. Z 2:222.

C. HETEROMORPHUM J. Ag. w 10:161. Z 2:222.

C. LEJOLISEA Farlow, w 10:161. Z 2:222.

C. ROTHII Lyng. Z 2:222.

C. SCOPULORUM w 10:161.

CALLIMENIA.

C. CALIFORNICA. Farlow. w 10:161.

CALLOPHYLLIS.

- C. **CENTROCARPA**. w 10:161.
 C. **FURCATA** Farlow. w 10:161, Z 2:223.
 C. **GRACILLARIOIDES** Farlow. w 10:161, Z 2:223.

- C. **LACINIATA** Kutz. w 10:161, Z 2:223.

- C. **OBTUSIFOLIA** Ag. w 10:161, Z 2:223.
 C. **VARIEGATA** Kutz. w 10:161, Z 2:223.

CALOTHRIX.

- C. **CONFERVICOLA** Ag. Z 2:218.
 C. **CRUSTACEA** Bond & Thuret. Z 2:218.

CERAMUM.

- C. **CALIPOERNICUM** J. Ag. w 10:161.
 C. **CODICOLA** J. Ag. w 10:161.
 C. **BUBRUM** Ag. Z 2:221, w 10:161 as var. *Pacificum*.

Variety *Pacificum* Col. w 10:161.

- C. **DIAPHANUM** Roth. Z 2:221.

CENTROCERAS.

- C. **CAVLULATUM** Mont. w 10:161, Z 2:222.

- C. **EATONIANUM** Farlow. w 10:161, Z 2:222.

CERATOTHAMNION.

- C. **PIKEANUM**. w 10:161.

CHAETOMORPHA.

- C. **AEREA** Dillw. w 10:161, Z 2:218.
 C. **CALIPORNICA** Collins. w 10:161.
 C. **CLAVATA**. w 10:161.

Variety *TORTA* Farlow. w 10:161, Z 2:218.

- C. **DUBYANA**. Harv. Z 2:219.

- C. **SUTORIA** Berk. Z 2:219.

- C. **TORTUOSA** Dillw. Z 2:219.

CHONDRIA.

- C. **ATROPURPUREA** Harv. w 10:161.

- C. **NIDIFICA** Harv. Z 2:225.

- C. **TENUISSIMA**.

Variety **CALIPORNICA** Collins. w 10:161.

CHONDROPSIS.

- C. **ATROPURPUREA** J. Ag. Z 2:225.

CHONDUS.

- C. **AFFINIS** Harv. w 10:161, Z 2:223.
 C. **CANALICULATUS** Ag. w 10:161, Z 2:223.

CEROCCOCUS.

- C. **TURGIDUS** Naeg. Z 2:217.

CHROOLEPUS.

- C. **AUREUM** Ktz. Z 2:219.

CHORDARIA.

- C. **ABIETINA** Rupr. Z 2:220.

CHRYSEMENIA.

- C. **OBOVATA** J. Ag. w 10:161. Z 2:222.

- C. **PSEUDODICHOTOMA** Farl. w 10:161, Z 2:222.

CHYLOCLADIA.

- C. **OVALIS** Hook.

Variety **COULTERI** Harv. Z 2:225.

CLADOPHOEA.

- C. **CARTILAGINEA** Rupr. Z 2:219.

- C. **ECKLONII**. w 10:161.

- C. **FRAECTA** Fl Dan. Z 2:219.

- C. **HUTCHINSAE** Farl. w 10:161.

- C. **LAETEVIRENS** Dillw. Z 2:219.

- C. **MEMBRANACEA** Ag. w 10:161.

- C. **SCOPAEFORMIS** Rupr. Z 2:219.

- C. **STIMPSONI**. w 10:161.

- C. **UNCIALIS** Fl Dan. Z 2:219?

COILODESMA.

- C. **CALIPORNICA** Ky. w 10:161.

CODIUM.

- C. **ADHERENS** Ag. Z 2:218.

- C. **TOMENTOSUM**, Stack. w 10:161,

Z 2:218.

- C. **LINDENBERGI** Ag. w 10:161.

- C. **MUCRONATUM**.

Variety **CALIPORNICUM** J. Ag. w 10:161.

COLPOMENIA.

- C. **SINUOSA** Derb & Sol. w 10:162.

- C. **TUBERCULATA** Saunders. w 10:162.

- C. **EXPANSA** Saunders. w 10:162.

CONSTANTINEA.

- C. **SITCHENSIS** Post & Rupr. Z 2:222.

CORALLINA.

- C. **OFFICINALIS** L. w 10:161. Z 2:225.

- C. **SQUAMATA** Ellis & Sol. w 10:162, as C. *chilensis* Californica. Z 2:225.

- C. **CHILENSIS** Desem.

Variety **CALIPORNICA**. w 10:162.

- C. **CRASSA** Collins. w 10:162.

- C. **GRACILIS** Lamour. w 10:162.

- C. **PISTILLARIS** Mont. Z 2:225.

CORDYLECLADIA.

- C. **CONFERTA** Mont. w 10:162, Z 2:224.

COSTARIA.

- C. **TURNERI** Grev. Z 2:220.

CROUORIA.

- C. **PURPUREA** Crm. w 10:162, Z 2:221.

CROUORIELLA.

- C. **AMERICA** Crm. Z 2:221.

CYSTOSIERA.

- C. **OSMUNDACEA** Ag. w 10:162.

CRYPTONEMIA.

- C. **CRENULATA** Ag. w 10:162.

- C. **DICHOTOMA** J. Ag. w 10:162.

- C. **OBOVATA** Ag. w 10:162.

CRYPTOSIPHONIA.

- C. **WOODII** J. Ag. Z 2:222.

DASYA.

- D. **HELENAE** Farlow. w 10:162, Z 2:225.

- D. **SUBSECUNDA**, Suhr. w 10:162, Z 2:225.

- D. **PLUMOSA** Harv. Z 2:225.

DELESSERIA.

- D. **ALATA** Ag. Z 2:224.

- D. **WOODII** Ag. Z 2:224.

- D. **QUERCIFOLIA** Bory. w 10:162, Z 2:224.

- D. **DECIPIENS** Ag. Z 2:224.

DEREESIA.

- D. **TENUISSIMA** Cronan. w 10:162.

DESMERESTIA.

- D. **LIGULATA** Lmx. w 10:162. Z 2:210.

Variety **HEBBACEA**. w 10:162.

- D. **LATIFRONS** Grev. Z 2:219.

DICTYONEURON.

- D. **CALIPORNICUM** Rupr. Z 2:220.

DICTYOTA.

- D. **BINGHAMIAE** J. Ag. w 10:162.

- D. **KUNTHII** Ag. Z 2:221. w 10:162 as D. *Binghamiae*.

- D. **DICHOTOMA** Lmx.

DICTYOPTERIS.

- D. **BONARIOIDES** Farl. w 10:162.

EGREGIA.

- E. **MENZIESII** Aresch. w 10:162. Z 2:221.

- E. **LAEVIGATA** Setchell. w 10:162.

ECTOCARPUS.

- E. **CRINITUS** Harv. w 10:162.

- E. **INDICUS** Saund.

- E. **HEMISPHERICUS** Saund.

- E. **PASCULATUS** Ag. w 10:162.

- E. **FIRMUS** Ag. Z 2:219 as E. *littoralis*.

- E. **GRANULOSUS** Ag. w 10:162, Z 2:219.

- E. **SILICULOSUS** Lyng. w 10:162.

- E. VIRESCENS** Thurst. w 10:162.
E. CONFEROIDES Le Jol. w 10:162.
 Variety **PYGMACEUS** Kg. w 10:162.
E. MITCHELLAE w 10:162.
E. LITTORALIS Harv. Z 2:219.
ENDABACHNE.
E. BINGHAMIAE J. Ag.
EISENIA.
E. ARBORAE Aresch. w 10:162, Z 2:220.
ENDOCLODIA.
E. MURICATA J. Ag. w 10:162. Z223:
ENTROMORPHA.
E. COMPRESSA Grev. w 10:162.
E. INTESTINALIS Lmx. w 10:162.
E. FLEXUOSUS. w 10:162.
ERYTHEROPHYLLUM.
E. DELESSERIOIDES Ag. Z 2:224.
E. GUNNINGII. Z 2:224.
FARLOWIA.
F. COMPRESSA J. Ag. w 10:162, Z 2:222.
F. CRASSA J. Ag. Z 2:222.
PAUCHEA.
F. LACINIATA Ag. Z 2:222, SBar?
FUCUS.
F. PASTIGIATUS Ag. w 10:162, Z 2:221.
F. HARVEYANUS Deen. w 10:162, Z 2:221.
F. VESICULOSUS L. w 10:162. Z 2:220.
F. FURCATUS Ag. Z 2:221?
GELIDIUM.
G. CORNEUM Lmx. Z 2:224, w 10:162 as G. Amansil.
G. AMANSII Lam. w 10:162.
G. AUSTRALIS. w 10:162.
G. CARTILAGINEUM Grev. w 10:162, Z 2:224.
G. COULTERI Harv. w 10:162, Z 2:224.
G. CRINALIS Ag. w 10:162, Z 2:224.
 Variety **SPATHULATUM** Hauck, w 10:163.
GLOEOCAPSA.
G. OREPIDINUM Thuret. Z 2:217.
GIGARTINA.
G. VOLANS Ag. Z 2:223.
G. CANALICULATA Harv. w 10:163, Z 2:223.
G. MAMMILLOSA Ag. w 10:163.
G. MOLLIS Bail & Harv. Z 2:223.
G. MICROPHYLLA Harv. w 10:163, Z 2:223.
 Variety **HORRIDA** Farlow. w 10:163, as G. radula forma horrida.
G. PISTILLATA Ag. w 10:163.
G. SPINOSA Ktz. Z 2:223, w 10:223.
G. RADULA Ag. w 10:163, Z 2:223.
 Forma **HORRIDA** Farlow. w 10:163.
 Forma **MICROPHYLLA**, w 10:163.
G. HORRIDA Farlow. w 10:163.
G. JABDINI J. Ag. w 10:163, Z 2:223?
G. PAPILLATA.
 Forma **CRISTATA.** w 10:163.
 Forma **DISSECTA.** w 10:163.
GRACILLARIA.
G. CONFEROIDES Grev. w 10:163, Z 2:224.
G. MULTIPARTITA Ag. w 10:163.
GRATELOUPIA.
G. CUTLERIAE Ktz. w 10:163, Z 2:222.
 Variety **SIMPLEX.** Z 2:222.
 Variety **PINNATA.** Z 2:222.
GRIFFITHSIA.
G. OPUNTIODES Ag. Z 2:222.
GYNNOGONGRUS.
G. LEPTOPHYLLUS Ag. w 10:163. Z 2:223.
- G. LINEARIS** Ag. w 10:163, Z 2:223.
G. TENUIS Ag. Z 2:223.
HALIDRYS.
H. OSMUNDACEA Harv. Z 2:221, w 10:163, as *Cystosiera osmundacea*.
HALOSACCION.
H. HYDROPHORA Ag. Z 2:223.
HELMINTHOCLADIA.
H. PURPURASCENS J. Ag. w 10:163.
HERPOSIPHONIA.
H. VILLUM J. Ag. w 10:163.
HALISERIS.
H. POLYPODIOIDES Ag.
HILDENBRANDTIA.
H. ROSEA Ktz. Z 2:221.
HYPNEA.
H. DIVARICATA Grev. w 10:163.
H. MUSCIFORMIS Lmx. w 10:163, Z 2:224.
H. ADUNCA J. Ag. w 10:163.
H. CRINALIS Harv. w 10:163, Z 2:224.
H. CORNUTA Ag. Z 2:224.
IRIDAZA.
I. PUNICEA. Z 2:223.
I. MINOR Bory. w 10:163.
I. LAMINARIOIDES Bory. w 10:163, Z 2:223.
I. DICHOTOMA. Z 2:223.
JANIA.
J. RUBENS Lmx. Z 2:225. w 10:163, as *Corallina crassa*.
KALLYMENIA.
K. CALIFORNICA Parl. Z 2:222.
LAMINARIA.
L. ANDERSONII Parl. Z 2:220.
L. FARLOWII Setchell. W 10:163. Z 2:220.
L. SINCLAIRII Farl & Eaton. Z 2:220.
LAURENCIA.
L. CERVICOENIS Harv. w 10:163.
L. OBTUSA Lmx. Z 2:225.
L. PANICULATA. w 10:163.
L. PAPHILOSA Grev. w 10:163, Z 2:225.
L. PINNATIFIDA Lmx. w 10:163, Z 2:225.
L. SPECTABILIS Post & Rupr. Z 2:225.
L. VIRGATA. J. Ag. w 10:163, Z 2:225.
LEATHESIA.
L. TUBERIFORMIS S F Gray. w 10:163, Z 2:219.
L. DIFFORMIS Aresch.
LEHMANNIA.
L. LEVEILLEI Ag. Z 2:219.
LESSONIA.
L. NIGERSCENS Bory. Z 2:220.
LITHOTHAMNION.
L. POLYMORPHUM Aresch. w 10:163, Z 2:225.
LITHOTRICH.
L. ASPERGILLUM J. E. Gray, w 10:163, as *Amphiroa aspergillum*.
LOMENTARIA.
L. OVALIS Ag.
 Variety **COULTERI** Harv. w 10:163.
LOPHOSIPHONIA.
L. OBSCURA. w 10:163.
LYNGBYA.
L. MAJUSCULA Harv. Z 2:218.
MACROCYSTIS.
M. PYRIPERA Ag. w 10:163, Z 2:220.
MELOBESIA.
M. AMPLEXIFRONS Harv. w 10:163, Z 2:225.
M. LENORMANDI Aresch. w 10:163.
M. MEMBRANACEA Lmx. w 10:163.

MESOGLOIA.**M. Andersonii** Farl. Z 2:220.**MICROCLADIA.****M. CALIFORNICA** Farl. w 10:163, Z 2:222.**M. COULTERI** Harv. w 10:163, Z 2:222.**M. BOREALIS** Rupr. Z 2:222.**MONOSTROMA.****M. QUARTERNARIUM** Desm. Z*2:218.**NEMALION.****N. ANDERSONII** Farl. w 10:164, Z 2:221.**N. VIRENS.** Z 2:221.**NEMASTOMA.****N. CALIFORNICA** Farl. w 10:164, Z 2:222.**NEREOCYSTIS.****N. GIGANTEA** Aresch. w 10:164. Z 2:220.**N. LUTKEANA** Post & Rupr. w 10:164. Z 2:220.**NITROPHYLLUM.****N. ANDERSONII** Ag. w 10:164, Z 2:224.**N. FREYANUM** Harv. Z 2:224.**N. LATISSIMUM** Ag. w 10:164, Z 2:224.**N. MULTILOBUM** J. Ag. Z 2:224**N. BUPRECHTIANUM** Ag. w 10:164, Z 2:224.**N. SPECTABILE** Eaton. Z 2:224.**N. VIOLACEUM** J. Ag. w 10:164, Z 2:224.**ODONTHALIA.****O. DENTATA** Lyng. Z 2:224.**O. LYALLII** Harv. Z 2:224.**O. ALEUTICA** Ag. Z 2:224.**OPHIDOCCLADUS.****O. SIMPLICIUSCULUS.** w 10:164.**OSCILLARIA.****O. NIGRA** Vauch. Z 2:217.**PADINA.****P. DURVILLAEI** Bory. Z 2:221.**PALMBELLA.****P. CRASSA** Ag. w 10:164.**PETROCELIS.****P. CRUENTA** Ag. Z 2:221.**PETROSPONGIUM.****P. BERKLEYI** Ag. Naeg. w 10:164.**PELVETIA.****P. FASTIGIATUS** Desv. & Thua. w 10:164.**PHYLLITIS.****P. FASCIA** Knetz. w 10:164, Z 2:219.**PEYSSONELLIA.****P. ATROPURPUREA** Crn. w 10:164.**P. DUBYI** Crn. w 10:164, Z 2:221.**P. SQUAMARIA** Decn. w 10:164.**PHYLOPHORA.****P. BRODIAEI** Ag. Z 2:223.**P. CLEVELANDII** Farl. w 10:164, Z 2:223.**P. MENZIESII** Ag. w 10:164.**FIKEA.****P. CALIFORNICA** Harv. w 10:164, Z 2:222.**P. CLEVELANDII** Farl. w 10:164.**FLOGAMUM.****P. COCCINEUM** Lyng. w 10:164, Z 2:224.Variety **CALIPORNICUM.** w 10:164.Variety **FLEXUOSUM.** w 10:164.Variety **SINUOSUM.** w 10:164.**P. VIOLACEUM** Farl. w 10:164, Z 2:224.**POLYPES.****P. BUSHIAE** Fahl. w 10:164.**POGANOPHORA.****P. CALIFORNICA.** w 10:164.**POLYSIPHONIA.****P. BAILEYI** Ag. Z 2:225, w 10:164, as *Ptersiphonia* Bailey.**P. BIPINNATA** Post & Rupr. Z 2:225. w 10:164, as *Ptersiphonia bipinnata*.**P. CALIFORNICA** Harv. Z 2:224, w 10:164, as *Ptersiphonia californica*.**P. CLEVELANDI** Farl. w 10:164, Z 2:225.**P. COLLABENS** Ag. w 10:164, Z 2:225.**P. DICTYURUS** J. Ag. w 10:164, Z 2:225.**P. PARASITICA.** w 10:164, Z 2:224.Variety **DENDROIDES** Ag. w 10:164, Z 2:224.**P. PINNATA** Ag. w 10:164, Z 2:225.**P. SENTICULOSA** Harv. w 10:164, Z 2:224.**P. VERTICILLATA** Harv. w 10:164. Z 2:225.**P. VILLUM** J. Ag. Z 2:225, w 10:164, as *Herposiphonia villum*.**P. URCEOLATA** Grev. w 10:164.Variety **PATENS.** Z 2:225.**P. WOODII** Harv. Z 2:225.**P. NIGRESCENS** Grev. Z 2:225.**P. FERVULACEA** Ag. Z 2:225.**POSTELSIA.****P. PALMAEFORMIS** Rupr. Z 2:220.**FRICKITIS.****P. ANDERSONII** Eaton. w 10:164, as *P. segregata*, Z 2:222.**P. CLEVELANDII** Farl. w 10:164, Z 2:222.**P. LANCEOLATA** Harv. w 10:165, Z 2:222.**P. DECIPiens.** w 10:165.**P. SEGREGATA.** w 10:164.**P. LYALLII.**Forma **GLADIATA.** w 10:165.**PTERODOPHORA.****P. CALIFORNICA** Rupr. w 10:165.**PTEROSIPHONIA.****P. BAILEYI** J. Ag. w 10:165.**P. CLEVELANDII** Farl. w 10:165.**P. PARASITICA.**Variety **DENDECIDEA.** w 10:165.**P. WOODII** Harv. w 10:165.**PTERYGOPHORA.****P. CALIFORNICA** Rupr. w 10:165, Z 2:220.**PTILOTA.****P. ASPLENOIDES** Ag. Z 2:222.**P. DENSA** Ag. w 10:165.**P. FILICINA** Ag. Z 2:222.**P. HYPCOIDES** Harv. w 10:165, Z 2:222.**P. SERRATA** Ag. Z 2:222.**POPEYIA.****P. VULGARIS** Ag. Z 2:221, w 10:164, as *P. perforata* variety.**P. NAIADUM** Anderson. w 10:164.**P. NEREOCYSTIS** Anderson. w 10:164, Z 2:221.**P. PERFORATA.** w 10:164.Forma **SEGREGATA.** w 10:164.**RALFSA.****R. VERRUCOSA** Aresch. w 10:165, Z 2:220.**READOMELA.****R. FLOCCOSA.** Z 2:224.**R. LABIX** Ag. w 10:165, Z 2:224.**R. SUBFUSCA** Ag. w 10:165.**RHOEDONIA.****R. COULTERI** Harv. w 10:165, Z 2:224.

RHODOCHITON.**R. FLORIDULUM** Noy. w 10:165.**RHODYMENIA.****R. CORALLINA** Grev. w 10:165, Z 2:223.**R. FLABELLIFOLIA** Ag. w 10:165.**R. PALMATA** Grev. w 10:165, Z 2:223.**R. PALMETTA** Grev. Z 2:223.**RICCARDIA.****R. MONTAGNEI** Derb. & Sol. Z 2:223.Variety **GIGANTEA** Farl. w 10:165.**RIVULARIA.****R. ATEA** Roth. Z 2:218.**SARCOPHYLLIS.****S. CALIFORNICA** J. Ag. w 10:165, Z 2:222.**SARGASSUM.****S. AGARDHIANUM** Farl. w 10:165, Z 2:221.**S. HETEROCYSTUM** Ag. w 10:165.**S. PILULIFERUM** Ag. w 10:165, Z 2:221.**SCHIZYMENIA.****S. COCCINEA** Harv. w 10:165, as *Sarcophyllis californica*.**S. EDULIS** Ag. Z 2:222.**SCINARIA.****S. FUECELLETA** Bivona. w 10:165. Z 2:221.Variety **UNDULATA** Farl. w 10:165.**SCYTOSIPHON.****S. LOMENTARIUS** Ag. w 10:165. Z 2:219.**SPERMOTHAMNION.****S. ROSEUM** Aresch. w 10:165.**S. SNYDERAE** Farl. w 10:165.**STENOGRAMMA.****S. CIRRHOSA** Ag. w 10:165.**S. FUSCA** Ag. w 10:165, Z 2:219.**S. TRIBULOIDES** Mengh. w 10:165.**SPYRIDIA.****S. FILAMENTOSA** Harv. w 10:165.**STENOGRAMM.****S. INTERRUPTA** Mont. w 10:165, Z 2:223.**STERBOCOLAX.****S. DECIPIENS** Schmitz. w 10:165.**TAENIOMA.****T. CLEVELANDI** Farl. w 10:165, Z 2:222.**TAONIA.****T. LENNEBACKERAE** Farl. w 10:165, Z 2:221.**T. SCHROEDERI** Ag. Z 2:221.**THALASSIOPHYLLUM.****T. CLATHERUS** Post & Rupr. Z 2:220.**ULOTHRIX.****U. PLACCA** Thuret. Z 2:218?**ULVA.****U. CALIFORNICA** Willey. w 10:165.**U. CLATHRATA** Ag. Z 2:218.**U. COMPRESSA** Le Jolis. Z 2:218.**U. ENTEROMORPHA** Tepolls. w 10:165, Z 2:218.**U. INTESTINALIS** Le Jolis. Z 2:218.**U. LACTUCA** L. w 10:165, Z 2:218.**U. PASCATA** Deille. w 10:165, Z 2:218.**U. LATISSIMA** Ag. w 10:165, Z 2:218.**U. LINZA** Grev. w 10:165, Z 2:218.**VAUCHERIA.****V. ———?** Z 2:220.**ZONARIA.****Z. FLAVA** Ag. w 10:165.**Z. TOURNEFORTII** Lmx. w 10:165, Z 2:221.**Z. INTERRUPTA** Ag. Z 2:221.**Z. LOBATA** Ag. Z 2:221.**LICHENS.**

The following are a few additions and changes in the list given on pp 240, 367

ALECTORIA FREMONTII Tuck.**BIATORA PHAEOPHORA** Stiz.

"Apothecia in groups, dun-colored; convex, the thin margin disappearing. Spores ovoid, ellipsoid, 12-14—7 mic, hypothecium colorless, hds of paraphyses faintly yellow. Hym. gel. I dark blue, Cl—, K—. On slate rock."—Hasse, *Erythea* 4:108.

CALICIUM CURTISII Tuck.**CHLOREA CALIFORNICA** Nyl.

Evernia vulpina Ach.

CLADONIA FIMBRIATA Fr.Hasse, *Erythea* 4:107, 150.Variety **TUBAEFORMIS** Fr.Hasse, *Erythea* 4:107.Variety **SUBCORNUTA** Nyl.Hasse, *Erythea* 4:108. On shaded earth.Variety **RADIATA** Fr.Hasse, *Erythea* 4:87.**COLLEMA CHALAZANUM** Ach.**COLLEMA MYRIOCOCCUM** Ach.**COLLEMA CONFERTUM** Nyl.**COLLEMA CHEILEUM** Ach.**COLLEMA COCCOPHORUM** Tuck.**COLLEMA AGGREGATUM** Nyl.**COLLEMODIUM PLICATYLE** Nyl.**COLLEMODIUM TURGIDUM** Nyl.**COLLEMOPSIS SCHAERERI** Nyl.*Pyrenopsis schaeeri* Nyl.**COLLEMOPSIS SEGREGATA** Nyl.

"Thallus of minute globular lobules collected in small clumps; Apothecia concave, reddish, with a turgid entire margin. Sp. simple, 0.016-17 long, 0.010-11 broad. On ground near Soldiers' Home, F 1897.—Hasse, *So Cal* ac pr.

GYROPHORA ANGULATA Hasse.**GYROPHORA PHAEA** Hasse.**GYROPHORA RUGIFERA** Nyl.**GYROPHORA SEMITENSIS** Hasse.**HEPPIA DESPREUXII** Tuck.**HEPPIA GUEPINI** Nyl.*Endocarpiscum bolanderi* Tuck.**HEPPIA LEPTOPHOLIS** Nyl.

"Thallus of rounded thick squamules, light olive green with a dark everted margin. Squamules contains one flat, or slightly concave, apothecium disk dark red with a darker proper margin. Spores globular decolorate 0.006 micro. millim. in diameter about 20 in azcl. Affinis *Hepphiae premmophilae*." (Nyl.) On clay. Original locality near Soldiers' Home.—Hass, *So Cal* ac pr.

HEPPIA POLYSPORA Tuck.**HEPPIA TERRENA** Nyl.**HOMODIUM MICRODIUM** Nyl.

"Thallus fusco nigrescens minutus fruticulosus furfurascens. Apothecia zeorine, thalline margin turgid, proper margin reddish of the color of disk, which is depressed. Sp. simple 0.012-16 long, 0.008-10 broad. Shaded banks, Sepulveda canon.—Hasse, *So Cal* ac pr:

LECANORA GLAUCOCARPA Ach.Hasse, *Erythea* 4:97, LA Co, on rocks.**LECANORA HAGENI** Ach.Hasse, *Erythea* 3:42, 4:107, LA Co, on

rocks.

LECANORA PHAEOBOLA Tuck.

Hasse, Erythea 3:42, LA Co.

LECANORA REDIMITA Stiz.

"Thallus tartareous, light to dark ash-colored; apothecia $\frac{1}{2}$ -1 li in diam, num, elevated, when young covered by the scurfy thallus, which finally remains as a pruinose covering on the blackening convex disk. Thalline margin erenate, eventually disappearing. Spores 24-28-6-10 mic, somewhat curved, 4-5-septate. Cl.—I dark blue, changing to brown; K—. Akin to *L. electina* Ach. On *Rhus laurina*. I have recently found this quite abundant on Umbellularia Californica and Alnus rhombifolia in Cannon del Gusto, Santa Monica range."—Hasse, Erythea 4:107.

LECANORA FUSCATA Fr.

Hasse, Erythea 3:43, LA Co.

Variety OLIGOCARPA Nyl.

Hasse, Erythea 4:97, LA Co, on rocks.

LECIDEA CONTIGUA F-

SD mesas.

LEPTOGIUM LACERUM Fr.

LEPTOGIUM CALIFORNICUM Tuck.

Variety LOPHATUM Tuck.

LEPTOGIUM ALBOCILIATUM Domez.

LEPTOGIUM PALMATUM Mont.

LEPTOGIUM HILDENBRANDII Nyl.

PARMELIA CONCRETA Stiz.

PELTIGERA CANINA Hoffm.

PELTIGERA SOREDIATA Schaer.

PELTIGERA VENOSA Hoffm.

PELTIGERA RUFESCENS Hoffm.

PERTUSARIA LECANINA Tuck.

Hasse, Erythea 3:43, LA Co.

PERTUSARIA WULFENII DC.

Hasse, Erythea 4:150, SBER mts, on trunks of trees.

PHLYSTIS ARGENA Kaerb.

PLATYSMA SAEPINCOLA Hoffm.

Certraria saepincola Ach.

STICTINA ANTHRASPIS Nyl.

TRACHYLIA TYMPANELLA Fr.

VERRUCARIA FALLAX Nyl.

Hasse, Erythea 3:44, LA Co, on bark.

AMONG THE WILD FLOWERS OF SAN DIEGO.

(By James S. Lippincott.)

[The following, revised by the editor, is taken from a pamphlet published in 1874 by the Chamber of Commerce of the City of San Diego.]

The vegetation of San Diego presents an extraordinary appearance to the visitor from the northern and eastern states, and, if he be possessed of scientific proclivities, will prove exceedingly interesting. Should he arrive in December, his attention will be early arrested by the peculiar mildness and the even range of temperature, which permits the continued blooming of many plants, and the appearance of flowers, whose congeners he is accustomed to find greeting the early spring in his eastern home. The equable character of the temperature through December, January and February is strikingly expressed in dormant condition of sundry incipient flowers, which, having advanced to the condition of colored buds, await through the three months named for a few warmer days in which to evolve their colors. One of the most remarkable of these is a caper-like plant (*Isomeris arborea*), which early in December exhibits a sparse bloom, and continues to labor under the difficulties of its condition, making no advance until March, when a few degrees of additional heat open its fine yellow flowers, and soon its large inflated brown seed-vessels appear at the extremities of the long protruded pistils.

The earliest plant which appears upon the lower bench or mesa, is a saxifrage (*Saxifraga Parryi*). This, like its eastern sisters, leads the floral throng, and blooms in December [or earlier, with the first showers of winter,] but unlike them enjoys the advantage of a tuberous root—a necessary aid for preserving its life during the long droughts of summer. Drawing sustenance from a depth of from four to six inches, it sends up its long, slender scape, and pale diminutive flowers, but anchored below, resists the unfavorable agencies that would destroy every eastern saxifrage, though accustomed to meagre fare, and taking fast hold in "the clefts of the rocks." In the sunny exposures in the arroyas occurs a shrub (*Eriogonum fasciculatum*), which, in December, adorns its sprays of fine cut foliage with heads of small, white flowers. For many weeks no others, except the above named, are conspicuous in uncultivated grounds. Soon a bright yellow flower (*Oenothera*) hugs the soil, which it adorns with its bright stars, and a yellow violet, its petals shaded on the back with a rich brown, and

its throat marked with dark lines, throws up its long peduncles from its leafy prostrate stem. Over the clumps of laurel-sumac (*Rhus laurina*) soon begin to trail the long green stems of the chilicothe (*Megarrhiza Californica*), with its racemes of white flowers. This extraordinary plant is possessed of a vast storehouse of supplies, and appears to be capable of enduring a siege through years of drought. Its corm is a solid fleshy mass, often exceeding the size of a bushel measure, and to the taste, intensely bitter. From this mass the long stems arise annually, and adorn large clumps of shrubbery with their green palmate leafage, and on the pistillate plant are developed, in March, the green spiny cucumbers.

A few days appear, bringing increase of heat, and life leaps upward, bloom and beauty increase around us, and the purple blossoms of the alfilerilla or Spanish pin clover (*Erodium*) appear. This plant presents the aspect of a flattened tuft of fine cut leaves pressed to the ground [often infested with a deep red fungus, resembling clots of blood.] Another species, where the soil is good, produces a heavy crop of leafage, upon which the horses, cattle and sheep of southern California are pastured.

Intermixed with the alfilerilla appear the slender, succulent stems and narrow spatulate leaves of the *Calandrinia Menziesii*, allied to the spring beauty of the eastern states. This plant often spreads over wide areas, adorned by its small magenta flowers peeping from amid the bright green of its leaves, and, in favorable situations, after heavy rains, it puts on a magnificent aspect, standing a foot or more in height, and, massing its brilliant coloring, rivals the glory of a bed of portulacca, to which it is closely allied.

As the vegetation of this region is influenced by the elevation and exposure it may be described more clearly by marking the changes as we rise from the bay shore to the distant heights. At the lowest levels, over which the highest tides flow, salt grasses and other maritime plants appear, and on the clay soil, elevated but little above the reach of tides, the ice plant abounds. The leaves are brilliant with a rich setting of gem-like vesicles filled to the utmost with saline juices, and cover the surface of the ground with their varied masses of green and purple, and bright with starry flowers. A walk over acres of these singular plants saturates one's boot-soles, and the sportive pedestrian, with but moderate effort, may slide upon the slippery surface.

Another plant, producing leaves of the shape, thickness and length of one's finger, but triangular in section, abounds on the sand dunes of the neighboring isthmus of San Diego, where its long trailing stems, beset at short intervals with its unique leaves and large red-fringed radiant flowers, are interesting to the most casual and least informed observer. On the bay sides of these dunes occurs *Rhus integrifolia*, which, with its heads of white and roseate small daphne-like, inodorous flowers, thick coriaceous leaves and strong growth, forms a highly ornamental shrub. This plant again occurs on the high mesa, near the city, and in Paradise valley it becomes a tree of respectable size, as does also, to the surprise of the eastern botanists, a species of elder (*Sambucus glauca*). An ericaceous heath-like shrub is abundant on the lower levels, and has put on the thick succulent character of saline plants, though generally possessed of a dry and coriaceous leaf. This plant delights to grow upon the extreme borders of the bluffs, and to hang its stiff branches over the low clay banks that bound the bay shore.

More remote, but not far distant from the water, the lower levels are delicately tinged with the light rose purple flowers of the *Gilia dianthoides*, with the magenta-flamed *Orthocarpus purpurascens*, sprinkled with the delicate white stars of *Krynitzkias*, and two varieties of the humble *Plantago Patagonica*. Over the bright green of these bay-side pastures appear broad spreading growths of purple-fruited pepper grass (*Lepidium*), which from

a position slightly elevated, appear like cloud-shadows flecking the surface of the brighter verdure.

On hill-sides in Paradise valley we have seen masses of the unique and beautiful Dodecatheon standing a foot high, hanging their pink and white banners with a singular abandon, so diverse in character and coloring from the eastern species.

Clumps of *Rhus laurina* now appear, so unlike in aspect from the eastern sumac, their feet tangled by masses of *Phacella tanacetifolia* and *Mirabilis Californica*, or adorned by the trailing stems and broad palmate leaves of *Megarrhiza Californica*, already referred to as among the earliest blossoms.

The alfilerilla now occurs more frequently, and, in the absence of grasses, forming a thick mat, gemmed with its small pink flowers, blooming through the winter far into the spring; and however dwarf they may have remained through poverty of sustenance, invariably, if not too closely cropped, put on at length their obliquely-arranged tufts of crane-billed seed vessels. The long slender divisions of this crane-bill are wound spirally upon the carpophores, and, when ripe, they are still more violently twisted, perhaps by hygrometric absorption and drawing the seed from its seat, lifts it aloft radiantly from the center of support, and offer it a prey to the winnowing winds, which scatter it far and near.

The lovely little *Gilia dianthoides* spreads its carnation-colored, fringed petals to our admiring gaze, covering the ground with its delicate tints of fairy beauty. A few ranunculaceous plants appear, among them an indigo-blue larkspur, but no showy yellow buttercups adorn the mead. Here the small *Linaria Canadensis* lifts its dark blue flowers, and *Calandrinia Menziesii*, with brilliant red petals, stars the greenery of its surroundings.

The caper shrub, already referred to, soon appears, and clumps of *artemisia*, with fine-cut leaves, become more abundant. The Spanish dagger (*Yucca Mojavensis*), flat-leaved cactus or prickly pear, and the club cactus or cholla, become more abundant as we leave the bay or descend into sheltered arroyas or dry water courses. In Cholla valley, the most remarkable of these protected localities, the cholla cactus (*Opuntia prolifera*) attains a height of 6 feet, and forms large clumps of impenetrable chapparal. The cactus frequently gives place to abundant growths of shrubs, among them *Arctostaphylos*, *Ceanothus*, *Rhus* and *Eriodactylon*; over these frequently trail the long vine of a pea, which hangs out its grand racemes of large crimson blossoms. A brilliant purple lupine appears at the foot of stony cliffs. Pale *astragalus*, with bladder-like legumes, occur at intervals, and a large red-flowered monkey-plant (*Mimulus*), adorns the dry arroyas; while the roadway is often lined with dense and tall growths of a bright yellow-flowered *Amsinckia*, which encroaches upon the wheat fields of this fertile vale. Such is the scene in March. In April new flowers appear; among the more beautiful, sheltered among the bushes, are *Collinsia bicolor*, two species of monkey-plants, the fuchsia-flowered gooseberry, and other annuals or perennial flowers. The yucca, in favored situations, displays a magnificent mass of rich purple buds and creamy lilies, bursting into beauty from amidst its forbidding clusters of dagger-pointed leaves. On stony slopes the low spherical *Echinocactus*, and a *Cereus*, occasionally appear. On these middle heights above the bay the ground is often yellow with a bright *Oenothera*, and the yellow violet, intermingled with the pale tint of the wild onion, and blue liliaceous plants, among which *Brodiaea capitata* is conspicuous; while composite flowers, such as *Senecio California* and *Pentstemon aurea*, cover thousands of acres.

The botanist can scarcely take a step without treading upon a plant unknown to him in his eastern fields. Now he stops to gaze with admiration upon the spread of *Dodecatheon*, or to throw up his hands with delight as

he pauses beside a half acre of California popples, which at midday resembles beaten gold, the most brilliant and the most fascinating of California flowers. Nature is here in her loveliest mood, and robed in her brightest colors. She has spread her tapestries until they rival the gorgeous carpets of Persian looms, and has hung the hillsides in draperies that outshine Bluff King Harry's "Field of the Cloth of Gold."

CONIFEROUS TREES AND SHRUBBERY OF SAN DIEGO COUNTY.

California is the native home of many stately forest trees, among them being the giant redwood or *Sequoia gigantea*—the largest tree known in the world, though Australia produces in her *Eucalyptus* the tallest on record. Many of the most beautiful known evergreens are natives of the Golden State, and a very fair proportion occur within the present restricted area of San Diego county.

The following is a brief list of the cone-bearing trees credited to San Diego county, with some brief references to more extended descriptions.

ABIES (Tournefort) Linnaeus, Fl Lapp 277 (1737); Link, in Linnaea 15 (1851) 525. Orcutt, Am pl 1:347 D.

A. concolor Lindl & Gord. in J Hort Soc 5:210 (1850). Orcutt, Am pl 1:347 D.

PINUS (Tournefort) Linnaeus Syst ed 1 (1735). Orcutt Am pl 1:348 D.

P. attenuata Lemmon, based on *P. tuberculata* Gordon 1849 non Don, 1836. Orcutt, Am pl 1:348 D.

Credited to the southern slope of the San Bernardino mountains, but not known from San Diego county.

P. Coulteri D. Don, in Linnaean soc tr 17:440 (1837). Orcutt, Am pl 1:190, 348 D.

P. flexilis James, in Long's Exped 2:27, 35. Orcutt, Am pl 1:349 D.

Summits of San Geronimo, San Jacinto and Santa Rosa mountains, in Southern California.

P. monophylla Torrey and Fremont, Rep 319 t. 4. Orcutt, Am pl 1:349 D.

P. Fremontiana Endl, Syn Conif 183, in part, not Gord.

Confined to the eastern slopes of the mountains bordering the Colorado Desert, in California and Baja California; perhaps more abundant in Nevada, southern Utah and Arizona, where it is well known as the Nut pine—one of the pinyones of the Mexicans, the seeds forming an important article of food to the Indians in primitive days.

P. Murrayana (Balf.) Bot Exped Oreg 2, cum ic.; A. Murr, in Bot Soc Edinb tr 6:351 (1860). Orcutt, Am pl 1:349 D.

Engelmann, Bot Cal 2:126, treated this as a variety of *P. contorta*. Abrams includes in his Flora of Los Angeles, page 4, and it extends to Oregon, Utah and Colorado.

P. Parryana Engelmann, in Am J Sc, sr 2, 34:332, in note (1862). Orcutt, Am pl 1:94, 349 D.

P. quadrifolia Parry, ex Parl in DC Prodr 14 (2):402.

This is the beautiful Pinyone pine of the mountain table lands of Baja California, the thin-shelled nuts being collected and roasted by the Indians for food. Some years they have been brought to the San Diego markets in great quantities, but the Indians who formerly harvested them are nearly extinct or scattered. They would gather the ripe cones and branches in layers, and burn, so that the cones would readily open and yield the delicious roasted nuts. The tree is often very symmetrical, but has not so far been made to thrive near the coast.

P. Lambertiana Douglas in Linn soc tr 15:500 (1827). Orcutt, Am pl 1:190 D.

A tree of gigantic dimensions, 150-300 ft hi, and 10-20 ft in diam, with

light brown smoothish bark splitting in small sections: lvs $3\frac{1}{2}$ -4 i long, rigid, with 5 or 6 lines of stomata on each of the 3 sides: male fls oval, $\frac{1}{2}$ i long, with 10-15 involucre scales; anth denticulate-crested: cones cylindrical, bright brown, 12-18 i long and 3 or 4 i wide, on peduncles 3 i in length: sds smooth, black, 6 li long; wing not quite twice as long, widest below the middle, obtuse cotyledons 13-15.

"The exudation from the partially burned tree loses its resinous qualities and acquires a sweetness similar to that of sugar or manna, for which it, is sometimes used, whence the name of sugar pine."—Engelmann, in Bot Cal 2:123.

The sugar which the writer has collected from trees in the Cuyamaca mountains, east of San Diego, was very sweet, fine-grained and white as snow. It occurs throughout California, north to the Columbia river, and is very valuable for its timber.

P. muricata D. Don, in Linn Soc tr 17:441 (1837). Orcutt, Am pl 1:190 D.

P. Edgariana Hartw, Hort Soc J 3:217.

A middle sized tree, 25-50 or rarely 80-120 ft hi, mostly slender (1 or 2 or rarely 3 ft thick), with reddish-brown roughish bark and a patulous top: lvs rigid, 4-6 i long, $\frac{3}{4}$ -1 li broad, strongly serrulate; bracts lightly fringed, subpersistent; sheaths 9 li long, at length reduced to 1 li: male fls oval, 6-8 li long, in spikes an i long: inv $\frac{1}{2}$ as long as fls, of 6 or 8 bracts, the outer as long as the inner: cones sessile, spreading or more or less recurved, in clusters of 4-7, often remaining closed and long-persistent, ovate and very oblique, chestnut brown 2-3 $\frac{1}{2}$ (usually 3) i long and 1 $\frac{1}{2}$ 2 i thick; prickles short and stout or (in the southern form) making long straightish or incurved spurs on the outside: sds 3 li long, grooved and rough, black; wing 6-8 li long, widest above the middle: cotyledons 4 or 5. Only known near the coast, where it is exposed to the sea winds and fogs, to an alt of 2000 ft, from Mendocino, Cal., where it grows tallest (in peat bogs), to Tomales Point (in the most sterile soil), Monterey and San Luis Obispo. The cones are said to persist on the tree over 30 years.

Tradition saith that pine trees formerly grew on Point Loma, but not a trace of any remain. This tree is found at the San Ysidro landing, near the iron mines in Baja California—some of the cone-bearing trees being scarce 3 ft hi! As this tree occurs both north and south of San Diego, it might well once thrived according to tradition on Point Loma.

P. Torreyana Parry ex Torrey, Bot Mex Bound 210 t 58, 59. Orcutt, Am pi 1:94, 351 D.

[The following "Historical notice of *Pinus Torreyana*," read by C. C. Parry before the San Diego Society of Natural History, 2 N 1883, and printed in the West American Scientist 1:37-38, seems worth reprinting.]

In the spring of 1850, when connected with the Mexican Boundary Survey, my attention was first called to a peculiar species of pine growing on the Pacific coast at the mouth of the Soledad valley, San Diego county, by a casual inquiry from Dr. J. L. LeConte, the distinguished American entomologist, then staying in San Diego, who asked what pine was growing near the ocean beach at that locality. Not having any specimens to show, he simply mentioned at the time its dense cones, and its long, stout leaves, 5 in a sheath. Not long after an opportunity offered to the writer for a personal investigation, having been ordered by Major W. H. Emory to make a geological examination of the reported coal deposits on the ocean bluff above Soledad.

In making a section of these strata (see report of the Mex Bound Surv, Vol. 1, pt 2) it was necessary to follow up some of the sharp ravines that here debouch on the ocean beach, and here my attention was taken up by this singular and unique maritime pine, which, with its strong clusters of terminal leaves and its distorted branches loaded down with ponderous cones, was within easy reach of botanical clutch. From the notes and col-

lections there made, a description was drawn up dedicating this well marked new species to Dr. John Torrey, an honored friend and instructor of both Dr. LeConte and the writer.

Of the few specimens then collected a single cone and bunch was sent to Dr. Torrey, to be figured for the Mexican boundary report (Vol. 2, p. 10, pl. 58-59). While there it fell under the notice of some inquisitive botanist, who extracted some of the loose seeds, which were planted, but by some inadvertance were mixed with a 3-leaved species. When growing, the two different kinds became confounded and it was inferred that the present writer was mistaken in regarding this species as 5-leaved.

Prof. Parlatores, the elaborator of *Coniferae* in DC *Prodromus* added to this confusion by ignoring the name first proposed and substituting that of *Pinus lophosperma*, but fortunately the earlier publication of the Mexican boundary survey, with an accurate figure, permanently fixed the name of *Pinus Torreyana*, Parry, thus commemorating one of our most honored American botanists by association with a tree peculiar to the Pacific coast in a region which has been so often enriched by his early botanical labors as a collaborator.

Subsequently collectors have frequently visited this locality, bearing away to the remotest portions of the world seed of this pine, which, so far as is known, is confined to a coast line of not more than four miles, lying between San Dieguito and about a mile below Soledad, and extending scarcely a mile inland. [Since this time it has been found on Santa Rosa Island by T. S. Brandegee.]

The bulk of the tree growth is here mainly confined to a series of high broken cliffs and deeply indented ravines on the bold headlines overlooking the sea south of Soledad valley and within the corporate limits of the town of San Diego. Here, within a radius of not more than half a mile, this singular species may be seen to the best advantage clinging to the face of the crumbling yellowish sandstone or shooting up in more graceful forms its scant foliage in the shelter of the deep ravines, bathed with frequent sea fog. One of the finest specimens seen reaches a height of nearly fifty feet, and shows a trunk eighteen inches in diameter at base.

Thirty years after this first discovery, in the fall of 1880, the writer visited this locality for the second time, accompanied by the well known botanist, Dr. George Engelmann of St. Louis. At that time more complete examinations were made and sections of a trunk over one foot in diameter were procured and sent to the Forest Commission of the Tenth United States Census.

Only a short time since the writer again visited the locality, aided by the liberality of the California Southern Railroad Company, whose track makes this fine resort easily accessible by barely an hour's travel from San Diego. Here, seeking shelter from the fervid rays of a February sun under the scant shade of this decrepit forest, listening to the sullen dash of the Pacific waves against the bold shores, among other thoughts suggested by the inspiring scene and its past associations, one floats uppermost like drifting seaweed and finds a fitting expression here. Why should not San Diego, within whose corporate limits this straggling remnant of a past age finds a last lingering resting place, secure from extermination this remarkable and unique Pacific coast production, so singularly confined within its boundaries, dedicating this spot of ground forever to the cause of scientific instruction and recreation? Where wiser generations than ours may sit beneath its ampler shade and listening to the same musical waves thank us for sparing "that tree."

[It may be well to here add that the supervisors of San Diego County passed an ordinance designed to protect this tree from vandalism, as a result of action taken by the society of natural history. Unfortunately the bulk of the trees are growing on private property, whose owner is reported to

have threatened to cut them down for firewood. A few trees are said to exist on a tract transferred by the city to the San Diego Biological Association, by whom it is to be hoped they may receive due appreciation and care. As it thrives with us in cultivation many more should be planted around San Diego, and thus preserve the species from possible extinction.]

JUNIPERUS Tournefort ex Linnaeus, Syst ed 1 (1735).

Juniper. A genus of the northern hemisphere, including some 20 old world species and 10 American. The wood is fine-grained, not resinous, exceedingly durable, the heart-wood usually reddish and more or less fragrant. Fls dioecious or sometimes monoecious, the small solitary aments axillary, or terminal upon short lateral branchlets; scales few and (like the lvs) decussately binate or ternate. Stam fls oblong-ovate; anth-cells 4-8 under each shield-shaped scale. Fertile ament of 2 or 3 series of fleshy scales, with 2 erect ovules to each scale, in fr becoming united into a blue-black or reddish drupe, ripening the second year. Sds 1-12, ovate, bony. Cotyledons 2 (in a single species more). Low shrubs or trees, with mostly thin shreddy bark, and with evergreen binate or ternate, free and subulate or adnate and scale-like lvs; branches and lvs not 2-ranked.

J. Californica Carr, in Rev Hortie sr 4, 3:352 (1854).

Fruit reddish, dry and sweetish; a shrub or small tree, 20-25 ft hi, conical, with stout spreading branches and thick branchlets; lvs ternate, short and thick, mostly acute: fr oblong-ovate, 5-7 li long, of 6 or rarely 4 scales, usually 1-seeded: sd 4-6 li long, very thick and bony, smooth, often angled or grooved, brown with a whitish 2-3-lobed hilum: cotyledons 4-6. Sacramento to San Diego (Watson, Bot Cal 2:113).

Variety *Utahensis* Engelm., St Louis ac tr 3:588.

Branchlets more slender: fr globose and smaller, 3 or 4 li in diam. Nevada; Arizona; southern Utah; Baja California (Orcutt 830).

J. Cerrisianus Kellogg, Cal ac pr 2:37. Hesperian Mr. 1860, f.

Greene, Pittonia 1:197, 207. Cedros Island.

Curran, Cal ac b 1:147, states fr is very different from *J. Californicus*.

Engelmann, St Louis ac tr 3:588, states that a specimen in Herb Torrey is *J. Californicus*, and is so cited as a synonym in Bot Cal 2:113.

J. occidentalis Hooker, Fl Bor Am 2:166. Engelmann, St Louis ac tr 3:590. Watson, Bot Cal 2:113.

Deserts of San Bernardino county, to Oregon and Idaho. Fruit 3-4 li in diam, blue-black, resinous-fleshy, sds 1-3, deeply pitted: cotyledons 2. Mohave desert (Orcutt 253).

J. andina Nuttall, Sylva 3:95 t 110?

CUPRESSUS Tournefort ex Linnaeus, Gen ed 1:294 (1737).

Cypress: evergreen trees, with small scale-like adnate and appressed decussately opp and imbricated lvs, usually glandular-pitted; branches and lvs not 2-ranked. The close-grained fragrant and durable wood resembles *Juniperus*. Fls monoecious. Aments terminal, of few decussately opp scales. Stam fls small; anth-cells 3-5 under each ovate obtuse subpeltate scale; pollen-grains simple. Fertile aments erect on short lateral branchlets of 6-10 very thick peltate valvate scales, becoming a globose or subglobose woody cone, maturing the second year. Ovules num, in several rows at the base of the scales, erect. Sds acutely angled. Cotyledons 2-4. In Central Asia and the Mediterranean region occur 4 or 5 species, 3 or 4 are found in western Mexico, the rest of the known species belonging to California.

C. macrocarpa Hartwig, in Hort Soc J 2:187 (1847).

The Monterey Cypress, a tree becoming 40-70 ft hi, with rough bark, spreading horizontal branches and flattened top, is found near the sea on granite rock from Point Pinos near Monterey southward 4 or 5 miles to Pescadero ranch. It was early introduced into England, and is now widely cultivated, especially in southern California, and forms a characteristic feature of the flora of San Diego, though not native. At Point Pinos "the trees

very much resemble the Cedar of Lebanon in habit, with dense far-spreading branches. W. H. Brewer recorded a circumference of 18 2-3 ft at height of 5 or 6 ft from the ground. Branches with dark gray and somewhat rugose bark; branchlets rather stout; lvs bright green, acutish, obscurely pitted on the back, often with a longitudinal furrow on each side: scales of very young cones with conspicuous foliaceous tips; mature cones clustered on short, stout peduncles, oblong-ovate (1-1½ i long by 9 li broad), of 5 or usually 6 pairs of scales, with a broad thickish or on the uppermost a subconical boss: sds num (about 20 to each scale), mostly 2½ li long.

Synonyms: *C. Lambertiana* Gordon, Carr, Conif 124. *C. Hartwegii* Carr, Conif ed 2, 168.

C. Guadalupeensis Sereno Watson, Am ac pr 14:300 (1879); Bot Cal 2:114. Orcutt, Am pl 1:189 D.

A widely spreading tree, 40 ft hi, 2-5 ft in diam, with bark flaking off in thin plates and leaving a smooth claret-red surface: branches drooping, branchlets very slender: foliage glaucous-green; glands obscure: cones globose and strongly bossed, an i or more in diam, of 6-8 very thick scales: sds large, 3 li long or more. A prized ornamental tree, called the Blue Cypress, first found by Dr. Edward Palmer on Guadalupe Island, and later by Dr. Parry and the writer on the mainland of Baja California, and in canyons near San Diego.

LIBOCEDRUS Endl, Syn Conif 42 (1847).

California white cedar: stam fls with 12 or more fil-scales; cones not reflexed, of 4 or 6 erect subverticillate and somewhat valvate thick-coriaceous scales, the lower pair smaller and sterile, the 3d pair when present also sterile and connate; sds very unequally winged; otherwise as *Thuya*. Only 4 known species, 2 South American, 1 in New Zealand.

L. decurrens Torrey, Pl Frem 7 t 3.

Heyderia decurrens Koch, Dendrol 2:177.

Thuya Craigiana Balf, Oreg Exped 2, t.

A tree conical in shape, with loose fibrous bark and very light and soft, light-colored wood, durable in water or under cover. It grows 100-150 ft hi or more, and 4-7 ft in diam, and occurs in the Coast ranges from Oregon to San Diego, and in the Sierra Nevada to an alt of 8,500 ft.

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SOME NATIVE FLOWERING SHRUBS.

It is proposed to describe from time to time the native trees and flowers of San Diego county, some of them being far better known in European gardens than in the gardens of San Diego city.

FREMONTIA Torrey, Smithson Contr 6:5 t 2 (1854).

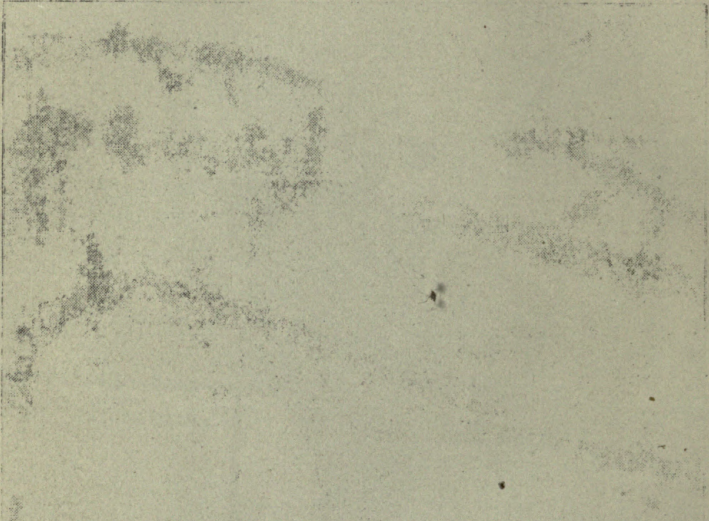
Shrub with hard wood and dark colored bark: lvs tawny-canescens or ferruginous beneath: bractlets 3, sometimes 5, minute, caducous: sep roundish, rotately spreading in anthesis, nectariferous-pitted at base: sta reg; fil adnate to cx at base, monadelphous to or above the middle; anth elongated-oblong, emarginate at both ends, adnate to an inconspicuous connective: cap ovoid, firm-coriaceous: sds smooth. Named in honor of General John C. Fremont, its famous discoverer.

F. Californica Torrey, Smithson Contr. 6:6 (1854). Brewer and Waston, Bot Cal 1:88. Hooker f, Bot Mag t 5591.

California slippery-elm: Mountain Leatherwood: loosely branching and bush-like, 6-10 ft hi or becoming a small tree 20 ft hi; branches tough and flexible, with many short leaf- and fl-bearing branchlets or spurs; lvs g above, covered beneath with a dense gray or whitish felt, ¼-1 i long, or on sterile shoots somewhat larger; petioles short; cx flannel-like, 1½-2 i broad, persistent, the sep commonly mucronate; cap ovate, covered with a



Charles Russell Orcutt and Cereus Orcuttii.



TO VIND
AMPHILO

dense brown felt and with short bristly hairs, $\frac{3}{4}$ -1 $\frac{1}{4}$ i long, persistent. Lake Co., Cal., to Baja California; Nevada. A beautiful ornamental shrub, well-known in many European gardens.

Fremontodendron Californicum Coville, CNH 4:74 (1893). Parsons, W Fls Cal 162 t.

Cheiranthodendron Californicum Baill, Hist Pl. 4:70.

Katharine Brandegee, Zoe 1:82, reports from Santa Clara Co., Cal.

STYRAX [Tournefort] Linnaeus, Syst ed 1 (1735).

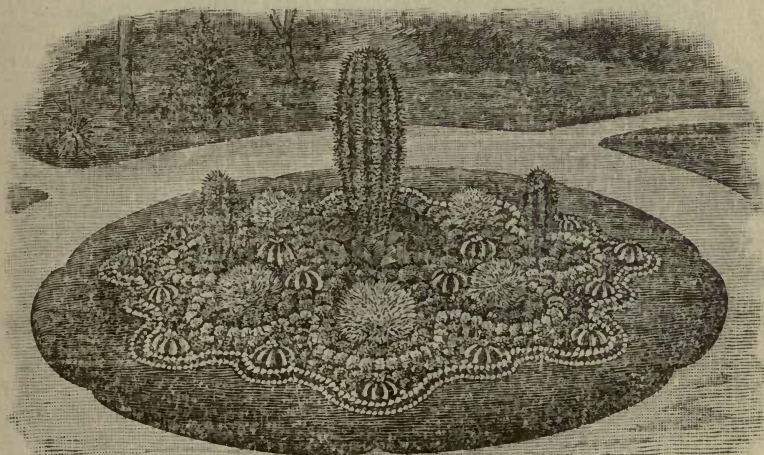
An Asiatic and American genus, warm-temperate or tropical with scurfy or stellate-downy herbage and mostly handsome fls. Cx persistent, truncate campanulate, the border merely denticulate or irregularly toothed, in the North American species coherent at its base with that of the 3-celled many-ovuled ovary: cor of 5 or sometimes 4-8 soft-downy pet, which are united at base into a very short tube, decid: sta 10: fl flat, monadelphous at base into a short tube which is coherent with the base of the cor: anth linear, 2-celled, fixed by the base, introse; the cells opening lengthwise: sty filiform: fr globular, its base girt by the persistent cx, at first rather fleshy, at maturity dry, commonly splitting into 3 valves, 1-celled, filled with a single large globular seed, which resembles a small nut; the sd-coat being thick and crustaceous: embryo nearly the length of the fleshy albumen: cotyledons broad and flat: radicle slender.

S. Californica Torrey, Smithsonian Contr 6:4 (1854); Pacific Ry R 4:118.

Brewer and Watson, Bot Cal 1:470.

A handsome shrub 5-8 ft hi: lvs ovate or oval, 1-2 $\frac{1}{2}$ i long, obtuse at both ends, entire, minutely stellately pubescent, at least when young, and even hoary beneath: fls much larger than in any of these of the Atlantic states, except the Texan *S. plantanifolia* Engelm, few in a cluster or corymbose raceme, on a short terminal peduncle: pedicels clubshaped: divisions of the white soft-downy cor 5-8 spatulate-lanceolate ($\frac{1}{2}$ i or more in length), imbricated in the bud: fl monadelphous nearly to the middle: bony sd $\frac{1}{2}$ i in diam. First collected by Fremont and occurs from Fallbrook (Parry, in Orcutt herb 808) to the upper Sacramento river.

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GRAMINEAE.

Ann or per herbs of various habit, rarely shrubs or trees. Sts [culms] com hollow or sometimes solid, the nodes closed. Lvs sheathing, the sheaths com split to base on side opp blade, a scarious or cartilaginous ring [ligule] borne at base of leaf-blade. Infl spicate, racemose or paniculate, consisting of spikelets of 2-many 2-ranked imbricated bracts [glumes], the 2 lowest in the complete spikelet always empty, one or both sometimes 0: 1 or more of the upper glumes com contains in axil a fl, which is com inclosed by a bract-like awnless organ called the palea, placed opp the glume with its back to th axis [rachilla] of the spikelet, com 2-keeled: fls perfect or stam, sometimes mon or dioe, subtended by 1-3, com; 2, minute hyaline scales [lodicules] placed at base of ova opp palea: sta 1-6, com 3; anth 2-celled, versatile longitudinally dehiscent. Ova 1-celled, 1-ovuled; sty 1-3, com 2 & lateral; stig hairy or plumose: fr a sd-like grain [caryopsis]; endospermstarchy. Grass Family.

cu=culms, the stem of grasses or sedges.

dioe=dioecious, fls of different sexes borne by separate plants, unisexual.

gm=glumes, floral bracts in grasses. mon=monoecious, having sta or pistils only.

nar=narrow.

oblg=oblong.

rach=rachilla.

spt=spike, resembling a raceme, but fls sessile or nearly so.

spkt=spikelet, a secondary spike; in grasses, the fls subtended by a common pair of glumes.

=feet. "=inches. "=lines.

Tribe **MAYDEAE**. Infl mon, spicate, stam and pist spks distinct on different part of plant or connected; when connected stam fls occupying upper portion of spk or spks, pist fls the lower part.

COIX L, Gen, ed 1, 280 (1737).

Jobs' tears; cult. China, India.

ZEA L, Gen, ed 1, 279 (1737).

Z. MAYS L sp pl 971. Paraguay. Maize or Indian Corn; cult.

TRIPSACUM L, syst, ed 10, 1261 (1759).

Fls in jointed spks, upper part stam, lower pist; upper sessile, in pairs at each joint of the triangular rachis; each

spkt with 2 membraneaceous male fls, outer gm conaceous or rigid: pist spkt single, embedded in joints of the thickened cartilaginous rachis, 2-fl, upper fl fertile, lower neutral; outer empty gm thickened and cartilaginous. Inner much thinner and pointed; fig gm and palets thin and scarious.

T. LEMMONI Vasey, CNH 3:6. Ar.

Tribe **ANDROPOGONEÆ**. Spkt in spike-like racemes, 2 at each joint of the rachis, 1 pedicellate & hermaphrodite, stam or rudimentary: gm com 4, 1st & 2d empty or with a stam fl in its axil, rarely awned, 4th or fig gm hyaline, com awned, awn com twisted or geniculate.

Infl composed of spike-like silky

racemes. Andropogon.

Infl paniculate; spkt somewhat silky pubescent. Sorghum.

ANDROPOGON MACRORUS Mich.

McClatchie, Erythea 2:77. Gabriel mts. Cantilles (Or 1144, 1163).

ANDROPOGON SACCHAROIDES Swtz.

Baja (Or 514); Colo; Kansas.

ANDROPOGON DISSITIFLORUS Michx

ANDROPOGON CIRRHATUS Hackel.

ANDROPOGON HIRTIFLORUS Kth.

ANDROPOGON WRIGHTII Hackel.

Genus **SORGHUM** Pers.

Ann or per grasses with lg broad flat lvs and terminal ample panicles: spkt in pairs at nodes, or in 3's at ends of branches, 1 sessile and perfect, the lateral pedicelled, stam or empty: sessile spkt consisting of 4 gm outer indurated and shining, obscurely nerved, inner hyaline, 4th awned and subtending a sm palea and perfect fl, or palea 0; sta 3: sty distinct: grain free.

SORGHUM HALAPENSE Pers.

Pers, Syn 1:101. Ab 21.

Johnson-grass. Cu erect, 9-15 dm hi, simple or sometimes much branched, smooth; sheaths smooth; lvs 2 dm lg or more, 7-25 mm wide, lg-acuminate; panicle open, 15-45 cm lg; branches com whorled, spreading, naked towards base; outer gms of sessile spkt 4-6 mm lg, ovate-lanceolate, com p'ish, pubescent with lg, appressed hairs; awn 8-16 mm lg, more or less bent, sometimes 0; pedicelled spkts of 4 gm, the outer 2 about 6 mm lg, membranous, the inner 2 sh'ier and nar'er, sometimes with stam fls.

Tribe **PANICEÆ**. Spkt hermaphrodite, terete or flattened on the back: gm 3-4, rare 2, when 4 the 3d com includes a stam fl in axil; fig gm firmer in texture than outer ones: axis of infl not articulated, the rach being articulated below empty gm & spkt decid singly from pedicels. A. spkt not surrounded by a bristly or

spiny inv.

Gm 3; spkt sessile or on sh pedicels in unilateral spkt or racemes. Paspalum.

Spikes digitate. Syntherisma.

Spikes not digitate. Panicum.

B. spkt surrounded by a bristly or spiny inv.

Bristles slender, not falling with spkt. Chaetochloa.

Bristles thickened below, spine-like, falling with spkt. Cenchrus.

Genus **PASPALUM** Linnaeus.

L, syst ed X, 855 (1759).

Per grasses of various habit, with com flat lvs and 1-fld spkt borne in 2-4 rows on 1-sided spk, which are single, in pairs or panicle: spkt oblg to orbicular, flat on inner surface, convex on outer: gm 3, rarely 2 by absence of outermost, outer ones membranous, inner one indurated and subtending a palea and perfect fl: sta 3: sty distinct; stig plumose: ova oblg or ovoid, smooth. **PASPALUM DISTICHUM** L.

L, Amsen, ac 5:391. Ab 22. Da 18. Z 1:185.

Jamaica to Cal.; San Diego Co (Or 508).

Cu erect, 15-35 cm hi, creeping at base; sheaths smooth, sometimes ciliate on margins or sparsely pubescent; lvs flat, 4-10 cm lg, 2-4 mm wide, smooth; spks 25-50 mm lg, in pairs, or occasionally with a 3d, exserted; rachis flat, 1-2 mm wide, smooth; skpts 2.5-3 mm lg, elliptic, somewhat pubescent or glab, acute, nearly sessile in 2 rows; outer gm 3-5-nerved, slightly exceeding the acute 3d one, which is sparingly bearded at apex. **PASPALUM PUBLIFLORUM** Rupr.

Rupr ex Gal Brux ac b 92:237. Vasey, grasses S W 25, So Cal. Parish, Z 5:111, not So Cal, but Baja. Coulter, CNH 2:499, Tex.

Cu 5-10 dm hi, erect or ascending from a creeping base, pubescent at nodes: lvs flat, lanceolate, 1-2 dm lg, about 1 cm wide: spks 3-6, spreading, 4-8 cm lg; rachis 4 mm wide; spkt in 2-4 rows, oblg, obtuse, nearly 3 mm lg, pubescent. Variety **GLAUCUM** Scribn. Coulter, CNH 2:499.

Rigid cu and lvs, glau thruout. S W Tex; north Mex.

P. VAGINATUM Swartz; Trin Sp Gram 1 t 12 a; Doell, Fl Bras 2 (2):75. B 2:257 as *P. distichum*. Coulter, CNH 2:499, Tex to Fla.

Genus **PANICUM** Linnaeus.

L, syst ed 1 (1735).

Ann or per grasses, varying greatly in habit and infl: spkt 1-2-fld, when 2-fld lower one stam only: gm 4, the 3 lower membranous, empty or the third with a stam fl; the fourth chartaceous shining, enclosing a palea of similar texture and a perfect fl: awns com 0: sta 3: sty distinct; stig plumose: grain free, enclosed in the hardened fruiting gm and palea. Panic-grass.

P. AGROSTOIDES Spreng, Pugill 2:4. Trin, sp gram 3 t 261. T, Fl NY 2:429 t 148. B 2:258.

"Valley of the Sacramento", Cal.

P. CALIFORNICUM Benth, bot Sulph 55. Baja. B 2:260.

PANICUM CAPILLARE L.

L, sp pl 58. Da 18. Ab 24.

Cu erect or decumbent, 3-6 dm hi, simple or sparingly branched; sheaths papillose-hirsute; lvs 15-30 cm lg, 6-15 mm wide, more or less pubescent; terminal panicle com 2-4 dm lg, lower branches exserted and widely spreading, 1-2 dm lg; spks 2-2.5 mm lg, acuminate; first gm $\frac{1}{4}$ - $\frac{1}{2}$ as lg as spkt; second and third gms nearly equal, acute, the fourth 1.5 mm lg.

Smith mt, S D Co (H. C. Orcutt); Baja. **PANICUM COLONUM** L.

L, Syst ed X, 870. Da 18. Ab 24. B 2:260.

Cu tufted, smooth, 2-6 dm hi, oft decumbent and rting at lower nodes; sheaths compressed, com crowded; ligule 0; lvs flat, 3-15 cm lg, 2-8 mm wide; panicles composed of 3-18, 1-sided more or less spreading dense branches, these 1-3 cm lg, spkts single, or in 2's or 3's in 2 rows on one side of the hispidulous triangular rachis, obovate, pointed; first gm about half as lg as spkt, 3-nerved, second and third gms a little more than 2 mm lg, awnless, 5-nerved, hispid on nerves, the fourth cuspidate.

Ft. Yuma, Cal. (Or 247); Baja (Or 1309). Texas.

PANICUM CRUS-GALLI L.

L, sp pl 56. B 2:260. Z 1:185. Da 18; Er 1:100, L A Co. Ab 23.

Cu 3-8 dm hi, com branching at base; sheaths smooth; lvs 1-5 dm lg, 3-12 mm wide, smooth or scabrous; panicle composed of 5-15 sessile mostly erect or ascending branches; spkt ovate, g or p, densely crowded in 2-4 row on one side of rachis; second and third gms about 3 mm lg, scabrous or hispid, third gm more or less awned, empty, fourth ovate abruptly pointed.

Ft. Yuma, Cal. (Or 2085); Baja.

PANICUM DICHOTOMUM L.

L, sp pl 58. B 2:259.

Cu from a few to 2° hi, erect, simple, or late in season decumbent and variously branched: lower lvs com ovate, upper linear-lanceolate, smooth, hairy, or velvety; terminal panicle open, ovoid, those of branches sh and oft included in sheaths; spkts 1" lg, oblg-obovate, smooth or hairy: lower gm roundish, one-third the length of the 5-7-nerved upper one. Yosemite.

San Diego Co (Or 540).

PANICUM SANGUINALE L.

L, sp pl 57. B 2:258. Da 18; Er 1:100, L A Co. Ab 24, as *Syntherisma canguinalis*.

Visalia, Cal.; Arizona.

P. FIMBRIATUM Presl, Rel Haenk 1:298. B 2:258 as *P. sanguinale*.

P. GLABRUM L. B 2:258. Eu, Asia.

P. GLAUCUM, L. sp pl 56. = *Setaria glauca* fide. B 2:260.

P. MILLICEUM L. sp pl 58. Millet. B 2:258.

P. PAUCIFLORUM Ell sketch 1:120. = *P. scoparium* fide B 2:259. G, Man 648.

P. POLYRHIZUM Presl, Rel Haenk 1:296. B 2:257 as *Paspalum distichum*.

P. PUBESCENS Lam, Encyc 4:748. Ab 24 as *P. scoparium*.

P. SCOPARIUM Lam Encyc 4:744. Ab 24. B 2:259.

Cu simple and erect, becoming pro-fuse with age; sheaths hirsute to vil-

lous, oft papillose; lvs com rounded or truncate at base, pubescent or glabrate, those of cu 4-6 cm lg, those of branches much sh'ier; terminal panicles less than 8 cm lg, ovoid, their branches ascending; lateral panicles much sh'ier, not exceeding lvs; spkts scarcely 2 mm lg, pubescent.

P. STRUMOSUM Presl, Rel Haenk 1:303. B 2:260. Cal.

P. THERMALE Bolander, Cal ac pr 2:181. B 2:259, and Curran, Cal ac b 1:150 as *P. dichotomum*. Ha 59. **PANICUM URVILLEANUM** Kth. Kunth, Rev Gram t 115. Brongn Voy Coquille, Pham 117 t 9. B 2:259.

Cu per, 1-2" hi, with the whole plant clothed with w'ish hairs: lvs rigid, 1-1½" lg, 3" wide at the flat base, convolute above and ending in a very lg tapering point: panicle 6-10' lg, open the not num branches solitary or in pairs, bearing toward their ends a few very hairy large spkts, 2-3" lg, ovate, acute: lower gm 7-nerved, 2-3ds the length of the 15-nerved upper one, the nerves in both distinct and g'ish: sterile floret stam, with 2 palea, the lower 15-nerved; perfect floret oblg, smooth except a fringe of lg silky hairs upon the margins.

Colorado Desert; Arizona; Chili.

P. WALTERIA Ell sketch 1:115. Chapm Fl 557. B 2:260 as *P. colonum*.

SYNTHESMA Walt, Fl Carol 76 (1788). IK as *Panicum*.

Ann grasses with flat lvs: spkt borne in pairs or in 3's in secured spk which are digitate or approximate at the summit of cu: gm 4 or 3, the innermost one chartaceous, subtending a palea of similar texture and a perfect fl: sta 3: stig plumose. Crab-grass.

S. SANGUINALIS Dulec, Fl Hautes-Pyr 77. Ab 23. *Panicum sanguinale* L, fide IK.

Cu erect or decumbent, oft rting at the lower nodes, 3-9 dm lg, smooth; sheaths glab or pubescent: lvs 5-15 cm lg, 4-8 mm wide, acuminate, glab or pubescent; spks 3-10, nar'ly linear, 4-15 cm lg, digitate at summit of cu; rachis flat, winged; spkt 2.5-3 mm lg, in pairs, 1 sessile or nearly so, lanceolate: first gm minute, 2d a half to a 3d as lg as the spkt.

Genus **CHAETOCHLOA** Scribner.

Ann or per grasses with erect cu, flat lvs, and dense cylindric or somewhat open bristly spk-like panicles: spkt hermaphrodite, com 1-fld: gm 4, outer 3 membranous, 3d oft subtending a hyaline palea and rarely a stam fl, 4th or flg gm chartaceous, smooth or transversely rugose, inclosing a palea similar in texture: sta 3: sty distinct: grain free, enclosed within the gm and palea. Bristly Foxtail.

CHAELOCHLOA GLAUCA Scribn.

Erect or ascending caespitose glau ann, 3-12 dm hi; culms branching at base, compressed, glab; nodes smooth; sheaths glab; ligule sh ciliate; lvs 5-15 cm lg, 4-8 mm wide, lg acuminate, nearly glab or scabrous on upper surface and margins, com pilose with scattered lg hairs at base; spks about 1 cm in diam; rachis

pubescent; setae 5-12 at each spkt, unequal, y'ish, 3-8 mm lg; spkts broadly ovate, 3 mm lg; palea convex at base, concave above, transversely striate. Ab 25.

Setaria glauca Beauv Agrost 51 (1812).

Panicum glaucum L. sp. Pl 56 (1753).

Chamaeraphis glauca Kuntze Rev. Gen.

Pl. 2: 767 (1891).

Ixophorus glaucus Nash Torr bot. cl. b. 22:423 (1895).

CHAETOCHLOA IMBERBIS Scribn.

Scribner, U S D-A agr b 4:39.

Parish, *Erythra* 7:89. Locally intro-

duced at Los Angeles (Hasse; Davidson).

Per; cu erect or ascending, more or

les caespitose, from creeping rtstocks,

slender, compressed, scabrous below the

panicle, otherwise smooth: sheaths glab,

the lower much lger than internodes,

smooth on the hyaline margins; lvs 1-3

dm lg, 3-7 mm wide, lg tapering to apex,

slightly scabrous on upper surface and

margins; spks 2-5 cm lg, nearly 1 cm

broad; rachis angular, pubescent, branch-

es sh, 1- or rarely 2-fld; setae 8-12,

spreading, 5-10 mm lg, unequal, slender,

finely antrosely scabrous; spkt ovate, ac-

ute, 2-2.5 mm lg; 1st gm about one-third

to two-thirds as lg as spkt, ovate, acute,

5-7-nerved; 3d gm equaling the flg gm,

5-nerved, subtending a broad palea of

its own length; flg gm elliptic-ovate,

finely transversely rugose; palea plane

or concave above. Ab 25. Sber.

Setaria imberbis R-S Sys 2:89.

Setaria caudata Davidson, Pl L A Co

31, not R-S.

ERIOCHLOA PUNCTATA Ham.

Ft. Yuma, Cal. (Or 2065).

CENCRUS L, Caroll Gen 20 (1737).

C. ECHINATUS L, sp pl 1050. Z 1:187;

2:34 (= *C. tribuloides*).

C. MYOSUROIDES HBK, nov Gen 1:115

t 35. B 2:261. Son. Vasey, CNH 3:39.

Fla, Ga, Tex.

CENCRUS PALMERI Vasey.

Calmalli (Orcutt 2573).

C. PAUCIFLORUS Bth, bot sulph 56. B

2:261 as a few-fld form of *C. tribuloides*

(Baja; Carmen Island).

C. SPINIFEX Cav lc 5:38 t 461. B 2:261

as *C. tribuloides*.

CENCRUS TRIBULOIDES L.

L, sp pl 1050. B 2:261. Ab 26. Z 1:187;

2:34. Eu Sber.

Cu erect or decumbent from an ann

rt, com robust, 15-45 cm hi, freely

branching; sheaths com very loose, com-

pressed smooth; lvs 6-10 cm lg, 4-8 mm

wide; spks 25-50 mm lg; inv crowded on

the scabrous rachis, globose, pubescent

except at the base, spinose stout; spkt

2-fld, about 6 mm lg.

New England; Baja; Arizona.

Tribe **PHALARIDEÆ**. Spkt

more or less laterally compressed, 1-

or rarely 3-fld; gm 5, 1st 2 empty &

below articulation of rach, 3d & 4th

above, com empty or rarely subtend-

ing stam fls, very unlike the other

ones, sometimes reduced to bristles,

the 5th gm with a 1-nerved or nerveless palea & a hermaphrodite flower.

Genus PHALARIS Linnaeus.

L. syst ed 1 (1735) Gen. ed 1, 14 (1737). Ann or per grasses with flat lvs and spk-like, capitate or narly paniculate infl: spkt crowded, 1-fl: gm 5, the first and second about = in length, strongly compressed laterally com wing-keeled, 3d and 4th much sm'er or rudimentary, 5th subtending palea similar to itself and a perfect fl: sta 3: sty distinct: grain oblg, free, smooth, enclosed in the gm.

P. AMETHYSTINA Trin, Mem ac Petersb sr 6, 3:56 (1835). B 2:265. Vasey, CNH 3:42. Cal, Ore.

Cu stout, tufted, 2-8" hi, from a per rt: lvs broad, sheaths oft p: panicle spk-like, oblg, 1-2' lg, dense, com p'lish: spkt 3-3½" lg: outer gm narly winged, straight, acutish: inner pair of gm hairy, over ½ as lg as perfect fl which is 2" lg or more.

P. ANGUSTA Nees, Fl Bras 1:28 t 9, Trin, sp Gram 1 t 78. B 2:265 as P. intermedia var. angusta. Vasey, CNH 3:42. Ab 27. Da 18. Cruz.

PHALARIS ARUNDINACEA L. L, sp pl 55. B 2:265. Ore, Mex, Arctic Am, Atlantic coast. G, man ed 6, 639. Vasey, CNH 3:42.

Cu stout, 2-4" hi; lvs flat, ½' wide; panicle 3-5' lg, nar, the sh branches spreading during anthesis, becoming appressed; spkt 2" lg: outer gm acute, imperfect pair ½ as lg as perfect fl.

P. CALIFORNICA H&A bot Beech 161. B 2:265 as P. intermedia.

PHALARIS CANARIENSIS L. L, sp pl 54. Da 18. B 2:264. Z 1:186. P 1:93, Mig. Greene, Cal ac b 2:414, Cruz, Da, Er 1:100, LA Co. Baja! G, Man ed 6, 639. Vasey CNH 3:43.

Cu 1-3" hi: lvs flat, upper sheaths much inflated: panicle 1-1½" lg, ovoid, very dense: outer broad, with a conspicuously winged keel, w on margin, with a distinct g line within: 2d pair of gm sm, lanceolate, smooth: perfect fl silky-hairy. Canary grass.

Cruz; S D; Baja! A widely naturalized weed.

PHALARIS INTERMEDIA Bosc.

Ex. Poir Encyc suppl 1:300. Br 1:205, Cruz. B 2:264. Vasey CNH 3:42.

Cu variable, stout or slender, 1½-4" hi, smooth: lvs sh, oft glau; sheaths more or less inflated: spk-like panicle 1-4' lg, ovoid to cylindrical: spkt 2½" lg: outer strongly winged on keel, acute: 2d pair of gm linear, hairy ½ as lg as perfect one, the latter long-pointed, hairy, 1:3d sh'er than outer gm. Tex; Cal.

Variety **ANGUSTA** Chapman.

B 2:265. Da 18. Vasey CNH 3:42 as P. angusta.

Cu stout, 2-3" hi: panicle cylindrical, dense, 3-6' lg, nar: spkt 2" lg: outer gm winged on keel, abruptly acute, serrulate on keel, 2d pair linear, slightly unequal, 1-3d as lg as perfect fl, latter 1-3d sh'er than outer gm and not lg-pointed as in P. intermedia. La, Tex, Fla, SD!

San Diego (Or 526); Florida.

PHALARIS LEMMONI Vasey.

Cu rather slender, 3-10 dm hi, smooth; sheaths smooth; glades 3-5 mm lg, acuminate; ligule 6 mm lg; spk dense, nearly cylindric, sometimes slightly interrupted or lobed; empty gm 4-5 mm lg, acute or acuminate; 2d pair about 1 mm lg; flg gm lanceolate, acuminate, about equaling empty gm, pubescent; palea nearly as firm in texture as its gm and a little sh'er.

Arizona; California.

P. MINOR Retz Obs 3:8. Ab 27. Af.

Cu simple or somewhat branched, 4-10 dm hi, erect or decumbent at base, smooth; sheaths com sh'er than the internodes more or less inflated; ligule rounded, 2-6 mm lg; blades 5-15 cm lg, 4-10 mm wide, smooth or faintly scabrous; spk 2-8 cm lg, dense; spkt 5 mm lg; empty gm more or less scabrous, 3-nerved, wing-keeled; 3d and 4th gm subulate, hairy; 5th twice as lg as the 3d and 4th, acuminate, pubescent with lg appressed hairs.

Tribe **AGROSTIDEAE**. Spkt all hermaphrodite, 1-fl, gm 3, 1st empty or rarely 0, com exceeding or equaling the 3d or flg gm in length; rach sometimes prolonged behind the palea into a naked or plumose bristle: palea com 2-nerved.

A. flg gm awned or mucronate pointed. Awn of flg gm terminal or from between the teeth of the bifid apex, sometimes 0 in Epicampes.

1. Awns 3-branched. Aristida.

2. Awns simple.

2. Awns articulate with gm.

Awns com lg, geniculate and twisted below, persistent. Stipa.

a. Awns sh, caducous, or 0. Epicampes.

b. Awns not articulate with the gm. Muhlenbergia.

Awn dorsal.

1. Spkt articulated with pedicel below empty gm. Polypogon.

2. Spkt not articulated below empty gm. a. Empty gm saccate at base, several times larger than the flg gm; infl spk-like. Gastridium.

b. Empty gm not saccate, never exceeding flg gm more than a third.

Empty gm smooth or minutely scabrous along keel. Agrostis.

Empty gm more or less hairy; infl spk-like. Alopecurus.

B. flg gm awnless.

1. Pericarp free from grain. Sporobolus.

2. Pericarp closely adherent to grain.

a. Empty gm abruptly awn-pointed. Phleum.

b. Empty gm not abruptly awn-pointed. Agrostis.

Genus ARISTIDA Linnaeus.

L, sp pl ed 1, 82 (1753).

Pls various in habit and infl, with very nar, oft involute setaceous lvs: spkts nar, 1-fl: gm 3, nar, the 2 empty ones carinate; 3d rigid and convolute, bearing 3 awns, sometimes rudimentary

or rarely 0: palea 2-nerved: sta-3: sty distinct: grain free, tightly enclosed in gm. Triple-awned grass.

ARISTIDA AMERICANA L f.

L f Pl Jam Puggill 7; Amsen ac 5:393 (1769); syst ed x, 879. = *Bouteloua bromoides* et *juncifolia* fide IK. Calmali! Colorado Desert (Or 2075).

Variety **BROMOIDES** Scribn & Merrill. Ab 28. Chollas (Or 1071). CD! Baja!

Cu slender, branching below and tufted, 8-35 cm hi; sheaths sh'er than internodes; ligule reduced to a sh fringe; sterile shoots few, lvs 2-8 cm lg, involute, setaceous, scabrid above; panicle exserted, spk-like, secund, p'lish, 2-5 cm lg; spkt on sh pedicels; empty gm nar, linear, abruptly pointed, scabrous on back, 1st 3-5 mm lg, 2d 5-9 mm lg; fld gm scabrous on keel, about as lg as the 2d gm; central awn sh'er, all scabrous; palea less than 1 mm lg.

A. ARIZONICA Vasey, Torr cl b 13:27. A 1:43 fdr.

ARISTIDA BROMOIDES HBK.

HBK nov Gen st sp 1:22. Ecuador. B 2:289. Da 19. Vasey, CNH 3:45. =A. Americana var *bromoides*.

Chollas (Or 1071); CD (Or 2245); Baja 1488). (Or 1436).

ARISTIDA CALIFORNICA Thurber.

Thurber, B 2:289. Br 2:212, El Llano de Santana, Baja. Calmali!

"Cu 5-10' hi, very densely tufted, geniculate below and branched above, pubescent, especially at the nodes: lvs involute, pubescent above, scabrous below, the radical from 1-1½' lg, those of the cu sh'er, the uppermost minute or reduced to a mere sheath; ligule a fringe of hairs; sheaths sh'er than internodes, loose, striate, pubescent or hirsute: panicle 1 or 2' lg, racemose, sessile, the other sh-pedicelled), the upper few fld, the lower spkt in pairs (1 per solitary; gm scabrous on keel, lacerate-fringed at apex, com p with w margins, the lower 4, the upper 6' lg; floret sh'er than the lower gm, with a conspicuous w-hairy callus 1-3d its length; lower palet minutely scabrous, especially above, pale g'ish and marked with p'ish-bk blotches, the upper palet about ¼ as lg; awns about equal, very slender, minutely scabrous, 1½-2' lg, twisted below into a slender stipe (5-8' lg), which is articulated with the upper palet and decid at maturity."—B 2:289.

C D (Schott); Ft. Mohave (Cooper).

Variety **FUGITIVA** Vasey.

"Differs from the type chiefly in the lower and more condensed habit, and in the longer empty gm. Late in the season it is loosened from the sand and blown about by the wind. CD (C. R. Orcutt)."—Vasey, CNH 3:49.

Variety **MAJOR** Vasey.

Br 2:212, Magdalena Island, Baja.

ARISTIDA DISPERSA Trin.

Trin & Rupr, Mem ac Petersb sr 6, 7:129 (1849). Vasey CNH 3:46. =A. Americana L.

Ann? cu branching, of variable height, panicle 1-6' lg contracted, com p'ish, lower branches mostly in 2's or 3's, un-

equal (½-1'), fig nearly to base: gm unequal or nearly equal, lower 3-4', upper 4-5' lg; fig gm 3": awns nearly equal, 5-8" lg, spreading. Tex to Cal.

A. FASCICULATA Torr, Ann Lyc N Y 1:154 (1824). =A. Americana L, Canada.

ARISTIDA DIVARICATA H-B.

A. DIVARICATA HBK ex willd Enum 99. Mex. McClatchie, Er 2:78, Altadena, Cal.

Baja mts (Or 1111); S Ber; Arizona.

A. ORCUTIANA Vasey, Torr cl b 13:25. Parish, Z 5:111 not "So Cal." Beal, Grass N Am 2:210, So Cal. Vasey, CNH 3:48, So Cal, Ar. A 1:44 fdr.

Type locality: Hansons, Baja mts not far south of US boundary, 6000' alt.

ARISTIDA PURPUREA Nutt.

Nutt, Am Phil sc tr 5:145 (1837).

G Man ed 6, 640. Vasey CNH 3:46.

Panicle rather erect, slender; empty gm aristulate, bifid at apex; awns capillary, very lg; lvs sh scabrous; per, lvs nar, sh and scabrous, ligule pilose; cu about 1' hi, panicle many-fld, a little spreading, branches capillary, fs com in pairs, bluish-p; one of the gm nearly twice the length of other, longer gm exceeding fig gm; awns equal, capillary, nearly 3 times the length of the fig gm and scabrous, fig gm minutely stipitate.

Baja (Or 1146); Arizona (Or 2515, 2532).

Variety **AEQUIRAMEA** Merrill. Ab 29 Based on variety *Californica* Vasey.

Rather stout, tufted, glab, 3-6 dm hi; cu simple; sheaths lg'er than internodes, pilose at throat: lvs involute, lower num 3-10 cm lg, 1-2 mm wide, those of cu about 3, com 3-4 cm lg; panicle p'ish, the branches capillary, com erect or ascending, com many-fld, 3-5 at each node; spkt pale or p'ish; 2d empty gm twice as lg as the 1st, equaling fig gm, both cleft at apex, mid-nerve excurrent as a scabrous awn, 1-2 mm lg; fig gm about 10 mm lg, strongly tuberculate-scabrous; awns equal, 5-7 cm lg. Tex. Cal.

Variety **CALIFORNICA** Vasey, CNH 3:47. =Var. *acquiramea* Merrill fide Ab 29.

Variety **FENDLERIANA** Vasey, U S Na Based on A. Fendleriana Steud.

"Per, cu tufted, 8-12' hi, very slender and erect, branching near base; radical lvs abundant, nearly capillary, involute, 3-4' lg, those of cu about 3, 1 or 2' lg; panicle 3-4' lg, thin; branches erect or becoming spreading, few-fld, mostly in 2's below, with sh capillary pedicels; empty gm variable, 4-6, 4-8, or 5-10' respectively; awns nearly equal, capillary 1-2½' lg."—Vasey, CNH 3:46.

hb cont 3:46.

Parish, Erythra 3:59.—"Rose mine, alt. 6,000 ft., eastern slope of the San Bernardino mts., Calif."

ARISTIDA SCABRA Kth.

Kunth Rev Gram 1:62. Br 2:212, Chapm, Fl suppl 663.

Baja (Br); Mexico.

A. SCHIEDIANA Trin & Rupr, Mem ac Peterrf, sr 6, 7:120 (1849). Br 2:212. Vasey, CNH 3:47, Tex, NM, Mex. A 1:44.

Genus STIPA Linnaeus.

L, sp pl ed 2, 78 (1753).

Com rather tall grasses with convolute, rarely flat lvs and paniculate infl: spkt 1-fld, nar; gm 3, outer 2 nar acute or rarely bearing an awn. 3d rigid convolute with a hairy callus at base and bearing a more or less bent awn, which is spiral at base and articulated to the gm; sta 3, rarely fewer; sty sh, distinct; grain nar free, tightly enclosed in gm. Feather-grass.

S. AVERNACEA H&A, bot Beech 403.

= *S. setigera* fide B 2:286.

S. BLOOMERII Bolander, Cal ac pr 4:168. = *S. Siberica* Lam fide B 2:287 et Curran, Cal ac b 1:150.

S. CALIFORNICA Merrill & Davy, Univ Cal pub bot 1:61. A 1:48 fdr.

S. CAPILLATA Hooker Fl Br Am 2:237. = *S. comata* fide B 2:286.

S. CHRYSOPHYLLA E Desv in C Gay, Fl Chil 6:278. B 2:285. Chili.

S. CILIATA Scheele, Linnaea 22:342. Tex. B 2:286 as *S. setigera*.

S. COMATA Trin & Rupr, Mem ac Petersb, sr 6, sci nat 5:75 (1842). B 2:285. Vasey CNH 3:52. Ore; Nebr; NM; Nev; Ut.

"Cu 1-4' hi, stout, mostly scabrous; lvs involute, roughened, the radical one-fourth or one-third, the length of cu, the lvs on which are much sh'er, the uppermost very sm or reduced to a mere sheath; ligule conspicuous, acute, 2 or 3' lg; sheaths loose, the uppermost somewhat inflated, smooth, at length sh'er than internodes; panicle included at base by upper sheath, open, 3-12' lg; rays ternate or in pairs, distant, few-fld; gm about 1' lg, nearly equal, 5-nerved, with a lg subulate point: floret (including callus of 2") 6' lg, readily decid; lower palet rather sparsely pubescent with coarse hairs, but with no distinct corona; awn 4-6' lg, seldom distinctly geniculate, scabrous especially above, shining, variously curled and twisted, soon decid; upper palet = lower; sta 3; anth mucronulate at apex (but not barbulose as described by Trin & Rupr)." —B 2:285.

STIPA CORONATA Thurb.

Thurb., B 2:287. Da 19. Ab 30. Vasey, CNH 3:51. Br 2:212.

Chollas (Or 1068); Ubi, Baja (Br); Arizona.

Cu 10-20 dm hi, stout, 6-8 mm thick at base, lower cu lvs oft 10 dm lg, 8-12 mm wide at base, gradually tapering to a lg involute point, uppermost about 15 cm lg, nearly filiform and rigid, all slightly scabrous on both surfaces and margins; ligule sh; sheaths rather loose uppermost dilated, smooth except margins, these ciliate especially at throat; panicle 3-5 dm lg, at length exerted and loose, nar with erect branches; spkt sn-pedicelled; empty gm acuminate and bristle-pointed, slightly scabrous on nerves, lower 16 mm lg, upper 12 mm lg; fig gm 10 mm lg, silky-pubescent; awn about 25 mm lg, slender, bent below middle and minutely scabrous; palea about half length of its gm; anth naked.

S. ELIETII Piper & Brodie, D-A agros b 11:46 (1898). Ha 62.

STIPA EMINENS Cav.

Cav Ic 5:42 t 467. Trin & Rupr Stipaceae 30. B 2:286. Ab 30. Da 19. Br 1:205. Cruz; 2:212, San Julio canon, Baja.

Cu tufted, slender, 3-9 dm hi, pubescent at nodes; lvs convolute-setaceous, basal ones about half as lg as cu, lower cu lvs 15-20 cm lg, uppermost 5 cm lg; ligule very minute; sheaths striate, smooth; panicle 10-15 cm lg, exerted, somewhat secund, the very slender sh rays in pairs, few-fld; lower gm about 10 mm lg, upper 8 mm lg, acuminate, p'ish; fig gm 5-6 mm lg, pubescent; awn about 25 mm lg, slender, bent near middle, minutely and evenly scabrous.

Chollas (Or 1065); Cruz; Arizona.

Variety **ANDERSONI** Vasey.

"Cu and lvs more slender, panicle thinner, empty gm 3-4' lg, 3-nerved, fig gm 2" lg, nearly cylindrical, tapering slightly above, sparsely hairy, corona very sh; awn 10-12" lg. Baja (Dr. Anderson, Dr. Hasse, Allen and others)." Vasey, CNH 3:54. Monica mts (Hasse) —not Baja probably. See *S. Hassei* Vasey. Da 19. Ab 30.

Stipa *Hassei* Vasey. U S Na hb cont 1:267 (1893). Santa Monica, Cal.

Wilcox, bot gaz 34:66.

S. LASSEI Vasey, CNH 1:267 (1893). Ab 29, Monica mts (Hasse).

Cu slender and wing, tufted, more or less branching below, erect, 3-4 dm hi; lvs very narly linear, setaceous, 1-2 dm lg, erect; ligule minute; sheaths nar, striated; panicle 5-7.5 cm lg, nar, loose, erect; branches erect, com 2-3 together, larger ones 25 mm lg or more, naked below, others fig to the base; spkt sm; empty gm narly linear-lanceolate, acuminate, about 5 mm lg, nearly equal; fig gm nearly as lg as empty ones, membranaceous, smooth; rach sh with a few sh hairs; palea half as lg as its gm; awn 16-18 mm lg, bent above middle, twisted below, nearly smooth; grain oblg, about 2 mm lg.

Wilcox, bot gaz 34:66, pronounces this an abnormal form of *S. eminens* andersoni, caused by the growth of a smut.

S. HYMENOIDES Roem & Schultz Syst 2:339 et Mant 188. B 2:283 as *Eriocoma cuspidata*.

S. JUNCIA Nutt, Gen 1:58 mon L. B 2:286 as *S. comata*.

S. KINGII Bolander, Cal ac pr 4:170. B 2:287. Curran, Cal ac b 1:150. Vasey, CNH 3:49. Cal.

Cu tufted, 6-20' hi, covered below by the remains of num sheaths, slender, smooth, with but 2 nodes near base; radical lvs ½ to 2-3ds as lg as cu setaceously involute, minutely scabrous; cu lvs 2, the upper sh; ligule 1" lg, acute, oft cleft; panicle nar, 2 or 3' lg, branches in 2's or 3's, lower 1' or more lg, erect, few-fld; spkt 2" lg; empty gm hyaline, p-tinged, the upper about 2" lg, lower a little sh'er; fig gm less than 2" lg, sparsely pubescent, and with a sh, hairy callus; awn 6' lg, bent below the middle, scabrous and persistent; palet = fig gm, hairy at apex. Cal.

S. LEUCOTRICHA Trin & Rupr, Mem ac Petersb, sr 6, sci nat 5:54. B 2:286 as *S. setigera*. Vasey CNH 3:53, "quite dis-

tinct from *S. setigera*." Tex, NM.

S. MEMBRANACEA Pursh, Fl Am 2:728. B 2:283 as *Eriocoma cuspidata*.

S. NEESIANA Trin & Rupr, Mem ac Petersl sr 6, sci nat 5:27. = *S. setigera* fide. B 2:286.

S. OCCIDENTALIS Bolander, Cal ac pr 4:169 = *S. comata* fide. B 2:285, 286.

STIPA OCCIDENTALIS Thurber, Thurber, ex Wat bot King 380. B 2:285. Ore. Vasey, CNH 3:50.

Cu slender, 1-2° hi, somewhat scabrous, more or less pubescent at nodes; radical lvs 2-4' lg, those of cu sh'er, all involute, rigid and rough; sheaths sh'er than internodes; ligule conspicuous, 2-3" lg, lacerate; panicle 3-6' lg, base oft included, contracted; rays mostly erect, lower in 2's or 3's and few-fld, upper solitary and 1-fld; lower gm 5" lg, 3- or indistinctly 5-nerved, somewhat exceeding the 3-nerved upper one; floral gm 3-3½" lg, brownish when ripe, pubescent with appressed hairs, especially below; callus sh, acute, apex with a sh, distinct crown of hairs; awn 1½" lg, twice bent and plumose to upper geniculation, with rather coarse hairs, less than a li lg below and sh'er above; palet ¼ sh'er than floral gm; anth naked.

San Bernardino to Wash.; Nevada.

Variety **MONTANA** Merrill & Davy.

"A slender densely tufted form, 2-5 dm high with strict few-fld panicles and prominent twice-geniculate awns, 3-3.5 cm long which are ciliate throughout with spreading or ascending w hairs about 1 mm long."—Merrill & Davy, Univ Cal pub bot 1:62. Jac (Hall 225).

STIPA PARISHII Vasey.

Vasey, bot gaz 8:32. Ha 63. Ab 31.

Cu tufted, lfy below, 3-4.5 dm hi, rather stout; sheaths smooth lg'er than internodes, margins of throat pubescent; blades involute, rigid, smooth below scabrous above, lower ones 12-18 cm lg, upper 8-10 cm lg; unicle included at base by somewhat inflated upper sheath, 12-15 cm lg, open; lower branches in 3's, upper in 2's or single, rather few fld; empty gm linear-lanceolate, smooth, 1st 12-16 mm lg, 2d about 2 mm sh'er; fig gm about 7 mm lg, silky with w hairs oft 5 mm lg, 2-toothed; awn 16-20 mm lg, smooth below, scabrous above.

S Ber (Parish); Cantilles (Or 1151); Arizona.

New Mexico; Arizona.

S. PARVIFLORA Nutt, Gen 1:58 not Desf. = *S. viridula* fide. B 2:288.

S. PENNATA L, sp pl 78. B 2:284.

Variety **NEO-MEXICANA** Thurber, bot Mex bound ined, fide. B 2:285.

S. SCRIBNERI Vasey, Torr cl b 11:125. CNH 3:52. NM. Ar.

STIPA SETIGERA Presl.

Presl, Rel Haenk 1:226. B 2:286 Da 19. Ab 31. Vasey, CNH 3:53. Br 1:205, Cruz; 218, Rosa.

Cu 3-9 dm hi, tufted, rather stout, pubescent at nodes; sheaths hairy at throat, the lower sh'er than internodes; basal lvs 1-3d as lg as cu; cu-lvs flat, 4-6 mm wide, uppermost nearly equaling Panicle; ligule about 2 mm lg, truncate; panicle 10-25 cm lg, mostly included below, loose, flexuous, more or less secund

when young, slender branches in pairs; pedicels sh'er than spkt; empty gm 12-18 mm lg, lg-acuminate; fig gm 10 mm lg, silky-hairy on nerves; awn geniculate above middle, bent again, twisted and pubescent below, 6-10 cm lg; anth bearded at apex.

Paja mts (Or 1190); Cal; Utah; Arizona.

S. SIBIRICA Thurber B 2:287 (not Lam) = *S. Bloomeri* Bolanderfide Vasey, CNH 3:54.

S. SPARTEA Hook Fl Bor Am 2:237 (not Trin) = *S. viridula* fide. B 2:288.

STIPA SPECIOSA T-R.

Trin & Rupr, Mem ac Petersl sr 6, sci nat 5:45 (1842). Cal, Chilli. Ab 31. B 2:284. Vasey CNH 3:52.

Cruz; Rosa; Chollas (Or 533).

Per; cu tufted, erect, 2-5 dm hi; sheaths sh'er than internodes, uppermost inflated; basal lvs ½ as lg as cu, scabrous, cu lvs com), 5-15 cm lg, closely involute; panicle oft somewhat included, spk-like, 6-20 cm lg, branches com in pairs, bearing 1-3 spkt; empty gm nearly equal, hyaline, acuminate, about 16 mm lg; fig gm silky-pubescent, 8-12 mm lg, 2-toothed at apex; awn 3-4 cm lg, geniculate below middle, the twisted portion pilose with w hairs 3-6 mm lg.

S. STELLMANI Bolander, Cal ac pr 4:169. B 2:287, Curran, Cal ac b 1:151. Vasey, CNH 3:51. So Cal.

Cu tufted, stout, 3-5° hi; geniculate below, smooth, except the pubescent nodes; radical lvs 12-18' lg, those of cu (4 or 5) much sh'er, all glau, involute, at least at the lg-attenuated apex, the lower 3-4" wide at base, mostly smooth below scabrous above and on margins; ligule minute; sheaths loose, sh'er than internodes, striate, smooth, slightly bearded at throat; panicle 5-10' lg, nar and spk-like, interrupted below, near w and lustrous, axis puberulent with an incomplete pilose ring at nodes; rays crowded and fasciculate, more or less united below, 1- to few-fld; gm nearly equal, about 9" lg, acuminately bristle-pointed, membranaceous-hyaline, lower 3, upper more or less 5-nerved at base; floret 5" lg, with a sh, 1-sided, w, hairy callus; lower palet herbaceo-chartaceous, distinctly 3-nerved, sparsely pubescent thruout, the division of the 2-cleft tip nearly 1" lg; upper palet similar; awn inserted below the tip of palet, 12-15" lg, tortuous, slightly bent above middle, scabrous; sta 3; anth lg, mucronulate. Blue canon, Sierra Nevada, Cal.

S. TENACISSIMA L, Cent pl 1:6. Eu. Af. B 2:284.

S. VASEYI Scribn, D-A argos b 11:46 (1898). Ha 63. Sleepy grass.

S. VIRIDULA Trin.

Br 1:205, Cruz, Ab 31. Da 19. B 2:288.

Cu stout, strict, simple, 4-7 dm hi; sheaths much sh'er than internodes; blades smooth or scabrid, involute setaceous at apex; basal lvs about 1-3d as lg as cu, cu lvs 3-4, 2-6 mm wide, the upper 3-6 cm lg; ligule sh with some hairs at throat; panicle exserted, nar, 12-40 cm lg, the sh erect branches in 2's or 3's; empty gm nearly equal, ovate-lanceolate, bristle-pointed, 6-12 mm lg;

fig gm pubescent, 5-6 mm lg; awn slender, flexuous, com twice bent, 2-4 cm lg, pubescent or plumose below; palea about half as lg as its gm; anther naked.

Cruz; Inyo mts (Coville); north.

CRYZOPSIS MEMBRANACEA Vasey.

Stipa membranacea Pursh.

Eriocoma cuspidata Nuttall, Gen 1:40.

British Columbia to Baja and Texas.

Genus CINNA Linnaeus.

Genus SPOROBOLUS R. Brown.

Per or an grasses with flat or convolute lvs and open or contracted panicles; spkt com sm, 1-fld, sometimes 2-3-fld; gm in the 1-fld spkt 3, membranous; the 2 outer empty, the first somewhat shorter; the third equaling or longer than the empty ones enclosing a perfect fl and a 2-nerved palea; sta 2-3: sty very sh, distinct; grain free. Drop-seed grass.

SPOROBOLUS AIROIDES Thurb.

Per; cu erect, rather stout and tufted, 4-9 dm hi; sheaths somewhat sh'er than internodes, throat ciliate; ligule very sh; lvs convolute, tapering to a filiform apex, those of the cu 4-5, the upper filiform, 2-3 cm lg; panicle terminal, ovoid, oft partly included at base, 2-3 dm lg, its branches again branching and bearing scattered spkt above the middle; spkt light lead-color or brown; empty gm obovate, nerveless, first 0.5-1 mm lg, second 1.5-2 mm lg; fig gm concave, broadly oval, 1-nerved, 2 mm lg; palea broader than its gm and a little sh'er, truncate.

Widely distributed through So Cal.; Baja; Arizona.

Occasional in low ground. Wilmington; Westminster; San Bernardino; San Diego.

T, Marcy R 300. Ab 334, B 2:269. Da 18.

SPOBOLUS ALTISSIMUS Vasey.

San Diego (Dr. Edward Palmer).

SARENACEUS Buckl, Phil ac pr 1862: 89=asperifolius fide 1K. B 2:270.

SPOBOLUS ASPERIFOLIUS Thurb.

Ness & Meyen, in Nov act Nat Cur 19: suppl 1, 141 (1843). B 2:269. Ab 34. Da 18. Bear.

Cu branching, 2-4 dm hi, ascending from stout creeping rtstalks, sheaths smooth, loose, longer than the num sh internodes, lvs flat, scabrous, 3-8 cm lg, 2 mm wide; panicle included at base, open, 9-18 cm lg, its branches scabrous, bearing single spkt at ends of very slender stiff branchlets; spkt tinged with p; empty gm lanceolate, 3-nerved, first 0.3-0.5 mm lg, second slightly longer; fig gm oval, obtuse, 1-1.5 mm lg; palea equaling gm.

Oregon to Chili; Nebraska.

SPOBOLUS CRYPTANDRUS A.Gray.

G, Bot N US, ed 1, 576. B 2:268.

C D (Or 1491); Oregon; Texas; New England.

SPOBOLUS DEPAUPERATUS Torr.

Scribner, Torr cl b 9:103 (1882). Ha 61.

Synonym: *Klifa depauperata* T. B 2:267.

San Bernardino mts (W. G. Wright).

S. DIFFUSISSIMUS Buckl, Phil ac pr 1862:90. B 2:269 as airoides.

S. GRACILLIMUS Vasey, Cat Gr US 44.

Scribner Torr cl b 9:103 (1881). Ha 61. Synonymy: *Bilfa gracillima* Thurber, B 2:268.

S. HUMIFERUS HBK, near Guaymas, Son!

SPOBOLUS RAMULOSUS Kth.

Kunth, Rev Gram 1:68. B 2:269.

Texas to California; Mexico.

SPOBOLUS WRIGHTII Munro.

Texas to Cal.; "Saccaton or Zacate."

Genus EPICAMPES Presl.

Tall per tufted grasses with com very lg spk-like panicles: spkt sm, 1fd: empty gm 2, membranous, slightly unequal, convex on back, carinate, oft finely 3-nerved; fig-gm 3-nerved, obtuse or emarginate, a little sh'er or about equaling empty gm, com tipped with a slender rather sh awn; sta 3: sty distinct, sh; stig plumose. Grain free, included within the gm.

EPICAMPES RIGENS Benth.

Per, tufted; cu rigid, erect, smooth, 5-10 dm hi; sheaths lg'er than internodes, loose, smooth; ligule 4-6 mm lg; lvs scabrous, rigid, involute apex attenuate, 1-3 dm lg; panicle exserted or somewhat included, erect, dense, spk-like, 2-5 dm lg, 5-8 mm broad; spkt minutely scabrous, elliptic; empty gm w, about 3 mm lg, nearly equal; fig gm awnless, minutely pubescent, about 2 mm lg. Baja!

Ab 35.—"Frequent in the San Gabriel mts, in canyons, confined mostly to the upper portions of the chaparral belt." Da 20.

Deer-grass.

CD (Parish); Texas. Ha U 58, Jac.

Genus MUHLENBERGIA Trin.

Per or ann grasses with convolute or flat lvs and paniculate inf: rtstocks oft scaly: spkt 1-2-fld; gm 3 or rarely 4; outer ones empty, membranous or hyaline, acute and sometimes awned; 3d 3-5-nerved, subtending a palea and perfect fl, obtuse, acute or produced into a capillary awn; sta com 3: sty distinct; callus minute; grain nar free, tightly enclosed in gm.

**MUHLENBERGIA CALAMAGROSTID-
EA** Kth.

So Cal; Arizona; Comondú, Baja (Br). **MUHLENBERGIA CALIFORNICA** Vasey.

Cu spreading, diffusely branched, 4-8 dm hi; panicles terminating the lg, leafy, terminal and lateral branches, 10-15 cm lg, its branches mostly alt, lower distant and subspicate; spkt sessile and crowded on branches; empty gm membranous except the hispid g keel, equal, lanceolate, acuminate, scarcely 4 mm lg, somewhat exceeding fig gm; fig gm about 3 mm lg, firm, scabrous, acute and terminating in a straight awn of about its own length, sparingly villous at base; palea about equaling gm, acute. Ab 32.

Muhlenbergia sylvatica Californica Vasey, Bot gaz 7:93 (1882).

San Bernardino (Parish).

MUHLENBERGIA DEBILIS Trin.

Cu tufted, decumbent at base and much branched, p'ish throat, 1-4 dm hi; lvs 25-50 mm lg, puberulent; ligule 1 mm lg, lacerate; panicle 5-12 cm lg, com

spreading, branches 25-35 mm lg, mostly single, sessile; spkt 2-3 mm lg, sh-pedicellate; empty gm nearly equal, one-fourth to one-fifth as lg as fig gm, mostly obtuse or eroded, hyaline; fig gm slender, tapering, scabrous thruout, terminated by a slender awn 25-35 mm lg; palea about = fig gm.

Ab 32.—"Com on dry ridges and exposed places in the chaparral belt. Monica, Gabriel and Santa Ana mts, south to SD."

Calmalli; Rosalia (Orcutt).

S D (Or 496); S Bar; Baja (Or 1435).

MUHLBERGIA DUMOSA Scribn.

Southern California; Arizona; Mexico.

Cu suffrutescent, 3-6° hi, smooth from a thick woody rhizome, very much branched; lvs filiform, 2' lg, very num; panicles num on the branches, oblanceolate, about 1' lg, loosely fld, intermingled with the lvs; spkt about 1½" lg; empty gm nearly equal, about ½" lg; fig gm nar, terete, prominently 3-nerved, pubescent below, tipped with an awn 2" lg; palet rather lg'er than gm.

MUHLBERGIA GRACILIS Trin.

Trin unif 193. Br Zoe 1:115 (Catalina) = M. debilis Trin (M. microsperma Trin) fide Parish, Z 5:112.

Mont.; Colorado; Arizona; California.

Per; cu 1-2° hi, slender, the nodes crowded at base, scabrous, covered at base with dry, open sheaths; lvs convolute, rigid, 4-6' lg; panicle 3-6' lg; flexuous, linear, nar; branches single or in 2's below, 1-2' lg, fig at base; pedicels scabrous, very sh; spkt 1½-2" lg; empty gm unequal, the lower about ½ as lg as fig gm, 3-nerved, acute or erose; upper gm 1-3d sh'er than fig gm, 3-nerved, acute or 3-toothed, with teeth sh-awned; fig gm 3-nerved, pubescent or scabrous on back, ciliate on margins; awn 4-8" lg; palet = its gm. Tex; NM; British Am.

MUHLBERGIA MEXICANA Trin.

Parry Wyo 16.

Cu ascending, much branched, 2-3° hi; panicles lateral and terminal, oft included at base, contracted, branches densely spk-clustered, or linear-contracted, or loose and open, 2-6' lg; empty gm slightly unequal, lanceolate, lg acuminate, about length of very acute fig gm, latter about 1¼" lg, sparsely pubescent below. New England; Colo; Minn.

McClatchie, Erythra 2:78. Gabriel mts.

MUHLBERGIA PARISHII Vasey.

Vasey, Torr cl b 13:53 (1886).

= Muhlenbergia Californica Abrams.

San Bernardino, Cal. (Parish).

MUHLBERGIA PUNGENS Thurb.

Thurb, Phil ac pr 1863, 78.

Br, Fl Colo 230.

B 2:277.

Somewhat resembling M. gracilis, but the very pale g foliage hard and rigid, each lf terminated by a hardened point: cu 1-1½° hi; panicle very open, its solitary rays fasciculate branched just above base into lg 1-fld divisions: spkt, including the awn, 2½" lg; gm ½ as lg as floret, pointed by a distinct bristle: floret with a very minute rudiment (sometimes developed into an imperfect floret); lower palet acute, awn 1" lg or less; upper palet with 2 setose teeth,

which nearly = awn give appearance of an undeveloped Aristida.

Croft, Cal ac pr 3:205, "Black grama, Grama China, regarded in Ar as most valuable forage."

Ft. Yuma, Cal. Utah; Nebraska.

Genus POLYPOGON Desf.

Ann or rarely per grasses with decumbent or erect cu, flat lvs and spk-like panicles: spkt 1fd: gm 3; the outer 2 empty, each extended into an awn, the 3d sm'er, com hyaline, sh'awned from below apex, subtending a palea and perfect fl: palea sh'er than gm: sta 1-3: sty sh, distinct: grain free, enclosed in gm and palea.

POLYPOGON LITTORALIS Smith.

Per, 3-6 dm hi, ascending from rt-stocks sh; sheaths nearly equaling the internodes, the upper slightly inflated; somewhat lobed, 4-8 cm lg; spkt 2-2.5 mm lg; awns = empty elliptic gm; fig gm 1 mm lg, truncate, hyaline, its awn nearly twice as lg; palea 2-toothed.

McClatchie, Erythra 2:77. Pasadena.

POLYPOGON MONSPELIENSIS Desf.

Ab 36. Da 18, Er 1:100 LA Co. Ha 60.

Ann; cu erect or geniculate, 2-5 dm hi; sheaths about = nodes, upper slightly inflated; lvs flat, scabrous; panicle spk-like, oval or cylindric, 3-8 cm lg, 1-2 cm broad, pale oft y'ish-g; spkt num, nearly concealed by the slender awns; empty gm pubescent or ciliate, obtuse, elliptic; awns 4 mm lg; fig gm 1 mm lg; hyaline, truncate-jagged; awn equaling or sh'er than gm or 0; palea 2-toothed.

Chollas (Or 506); Arizona; N. M.; Mohave; Cruz; Rosa; Guadalupe. Widely naturalized.

Genus GASTRIDUM Beauv.

Caespitose ann with flat lvs and shining spk-like panicles: spkt 1-fld, hermaphrodite: rach prolonged behind palea: empty gm 2, equal, enlarged or saccate at base, keeled above; fig gm much sh'er than empty ones, hyaline, truncate or obtusely 2-lobed, awnless or bearing a slender awn just below apex: palea nar, about length of gm: sta 3: sty sh, distinct; stig plumose: grain subglobose, free, included within the ventricose base of gm. Nit-grass.

GASTRIDUM AUSTRALE Beauv.

Vasey, CNH 3:78. B 2:275. Da Er 1: 101, Monica.

S D Co (Palmer); S F; Europe; Chili.

GASTRIDUM LENDIGERUM Gaud.

Cu more or less tufted, erect, 15-60 cm hi; sheaths sh'er than internodes, smooth; lvs 3-10 cm lg, 2-4 mm wide, acuminate, scabrous; panicle spk-like, 5-10 cm lg, 1 cm wide, pale g and shining; spkt lanceolate, 5-6 mm lg; empty gms scabrous above; fig gm hairy, bearing a slender awn below middle. Eu.

Ab 37.—"Com on dry ground in the chaparral belt thruout our range."

Vasey, CNH 3:78 as G. australe.

Genus CALAMAGROSTIS Adans.

Genus PHLEAUM Linnaeus.

Ann or per grasses with flat lvs and spk-like inf: spkt 1-fld: gm 3, the 2 outer empty, membranous, compressed, keeled, apex obliquely truncate, midnerve pro-

duced into an awn, third much sh-er and broader, hyaline, truncate denticulate at apex: Palea nar, hyaline: sta 3: sty distinct: grain ovoid, free, enclosed in the gm and palea. Timothy.

L, sp pl 59. B 2:262. Ab 33. Z 1:186. Da 18, ET 1:100 LA Co. Eu; cult.

PHLEUM ALPINUM L.

L, sp pl 59. B 2:263. Ha 59. Parry, Wyo 16. Alpine Timothy. NH. Colo, Cal, Alk.

Cu 1-1½° hi: spk ovate-oblg: empty gm strongly ciliate on back, tipped with a rough awn about their own length.

Alpine regions of Europe, Asia, and N A. **P. HAENKEANUM** J & C Presl, Rel Haenk 1:245. B 2:263 as alpinum. **PHLEUM PRATENSE** L.

Cu more or less tufted, erect, lfy, 3-9 dm hi, simple; sheaths smooth; blades minutely scabrous; spk about 6 mm wide, 3-10 cm lg; empty gm about 2 mm lg, hyaline except the 3 scabrous nerves; flg gm nearly 2 mm lg.

Europe; widely naturalized.

Genus **LEPTURUS** R. Br.

Mostly low ann, with nar lvs and strict or curved elongated slender spk; spkt 1-2-fl, sessile, 1 in alt notches of jointed rachis: empty gm 1-2, nar, rigid, acute, 5-nerved; flg gm much sh'er, hyaline, keeled, 1-sided to rachis: palea hyaline, 2-nerved; sta 3 or less; sty sh, distinct; sd nar, glab, free, enclosed in gm. Hard-grass.

L. BOLANDERII Thurb, ex G 7:401 (1863). B 2:322.

L. CYLINDRICUS Trin, Fund Agrost 123. Ab 58.

Cu slender, erect, straight, 2-4 dm hi, somewhat tufted, simple or com branched, smooth; sheaths smooth, much sh'er than internodes; lvs ascending, 1-2 mm wide, 3-8 cm lg, smooth; spk 5-15 cm lg, straight; empty gm very acute, about 4 mm lg.

L. INCURVATUS Trin, Fund Agros 123. Ab 58.

Cu much branched, internodes more or less curved, more or less p'ish thruout; spk num, incurved; empty gm 2, about 6 mm lg, nar, acute. SD. SF.

L. PANICULATUS Nutt, Gen Am 1:81. B 2:322. Da 19. = *Schedonnardus texanus* fide IK.

Genus **HOLCUS** Linnaeus.

H. LANATUS L, sp pl 1048. Eu. Ab 38. Ha 59. McClatchie, Er 2:78 LA Co B 2:299. Z 2:380.

Densely and softly pubescent thruout; cu 4-6 dm hi, erect, oft decumbent at base, simple; sheaths sh'er than internodes; ligule 1-2 mm lg; lvs 3-8 cm lg, 4-10 mm wide; spkt 4 mm lg; empty gm w-villous, upper awn-pointed; flg gm 2 mm lg, smooth and shining, lower sparsely ciliate on keel, somewhat obtuse, upper 2-toothed and bearing a hooked awn below apex. Velvet grass **H. MOLLIS** L syst ed 10, 1305. Eu. B 2:299.

ALOPECURUS L, Syst ed 1 (1735).

Ann or per grasses with erect or decumbent cu, com flat lvs and spk-like infl; spkt 1-fl, flattened; gem 3; the 2 outer empty acute, sometimes sh-awned, more or less united below, compressed,

keeled; keel ciliate or somewhat winged; third gm truncate or obtuse, hyaline, acute, sometimes 0: sta 3: sty distinct or rarely united at base: stig elongated. Fox-tail grass.

A. ARISTULATUS Michx, Fl Bor Am 1:43. B 2:263.

ALOPECURUS CALIFORNICUS Vasey. Santa Cruz Isl; SD!

A. GENICULATUS L, Sp Pl ed 1, 60. B 2:263. Ab 33.

Per; cu decumbent and oft rting from lower nodes, 2-4 dm hi, smooth; sheaths smooth, upper inflated; blades 1-3 mm wide, the lowest oft nearly equaling the cu, the uppermost equaling or exceeding spk; spk 2-4 cm lg, about 4 mm wide; spkt 2-3 mm lg; empty gm silky, obtuse; flg gm glab, their margins united to near middle; awn about 4 mm lg, slender.

Mesas, S D! Baja (Or 1438).

Variety **ARISTULATUS** T, Pac Ry R 6: 92. B 2:263 as A. aristulatus.

A. PRATENSIS L, Sp Pl 60. B 2:263.

Genus **AGROSTIS** Linnaeus.

AGROSTIS L, Syst, ed 1 (1735).

Ann or per grasses with flat or bristle-like lvs and paniculate infl: spkt 1-fl: gm 3, 2 outer empty, membranous, keeled, acute; 3d sh'er, obtuse, hyaline, sometimes bearing a dorsal awn, subtending a perfect fl: palea sh'er than gm, sometimes minute or 0: sta com 3: sty sh, distinct: grain free, enclosed in gm. Bent-grass.

A. AEQUALIVIS Trin in St Pet ac mem VI, 6, ii, 362 (1845). B 2:271.

Probably per; cu 10-18' hi, slender, erect, smooth, lvs flat, the lower 4-6' lg, 1-2" wide, upper 2-3' lg, smooth, pale g; upper ligules 1" lg; sheaths smooth; sh'er than internodes: panicle nar, 2-3' lg, loose, smooth, g or p; rays mostly in 5's below, somewhat distant, unequal, larger 1-1½' lg, fl-bearing from about middle; spkt about 1' lg, on pedicels mostly as lg as themselves; empty gm nearly equal, acute; flg gm acute, nearly as lg as empty ones; palet as lg or nearly as lg as its gm, with a minute hairy rudiment about ¼ as lg as floral gm. Alk. Wash. Ore. Mont. Cal.

Parish, Erythra 3:59. Bear.

McClatchie, Er 2:78, Gabriel. Vasey, CNH 3:77.

A. AIBOIDES T, NY Lyc ann 1:151; ex Spreng Syst Cur Post 31. B 2:269 as *Sporobolus* a.

A. ALBA L, Sp Pl 63. Eu. Asia. B 2: 271.

A. ALBICANS Buckl, Phila ac pr 1862, 91. B 2:273 as A. exarata.

A. ASPERIFOLIA Trin in St Pet ac mem VI, 6, ii, 317 (1845). B 2:273 as form of A. exarata. Ab 36.

Ann; cu erect, tufted, leafy, 3-6 dm hi; sheaths minutely scabrid: lvs 7-15 cm lg, 3-5 mm wide, scabrous; panicle interrupted, lobed and dense above, 10-15 cm lg; branches crowded, erect; spkt 2-5.3 mm lg; empty gm nearly equal, scabrous on nerves; callus with a tuft of minute hairs at base of each margin of flg gm; flg gm 1.5 mm lg, glab, minutely 2-toothed at apex, awnless; palea obsolete.

AGROSTIS ATTENUATA Vasey.

McClatchie, Erythea 2:78. Gabriel.
Alaska to California.

A. CALIFORNICA Trin Agrost 2:113.

B 2:273 as form? of *A. exarata*.

A. CANINA L, Sp Pl 62. B 2:274.

Variety **A. AEGUIVALVIS** Trin in Bong
Veg Sitth 171. B 2:271 as *A. aequivalvis*.

A. CRYPTANDEA T, in NY Lyc Ann 1:
151 (1824). B 2:268 as *Sporobolus crytandrus*.

AGROSTIS DENSIFLORA Vasey.

Santa Cruz, Cal. (Dr. C. L. Anderson).

A. DIEGUENSIS Vasey. A 1:43 fdr. Ab
37. CNH 3:74.

A. ELATA Trin, St Pet ac mem VI, 6, ii,
317 (1845). B 2:274.

A. EXARATA Trin, Gram Unif 205; Ic
Gram 3: t 27. Da 18. B 2:273.

Agrostis albicans Buckl, Phila ac pr
1862, 91.

Polypogon alopecuroides Buckl, Phila
ac pr 1862, 88.

Smith mt, S D Co (H. C. Orcutt); Alas-
ka; N. M.; Colo; Chollas (Or 518, 1058—
"probably forma *asperfolia* Vasey").

A. EXIGUA Thurb, in B 2:275 fd.

A. GRANDIS Trin, Agrost 2:70; St Pet
ac mem vi, 6, ii, 316 (1845). B 2:273 as
A. exarata.

Smith mt, S D Co (H. C. Orcutt).

A. ELLEBRANDI Thurb ex Boland,
Cal agr soc tr 1864, 136. B 2:271 as *A.*
aequalis.

A. LAXIFLORA Rich, Frankl Voy App
3. B 2:274 as *A. scabra*.

A. MICHAUXII Trin, Agrost 2:79; Gram
164. B 2:273 as *A. exarata* Trin.

A. MICROPHYLLA Steud, Syn 164. B
2:273 as *A. exarata*.

McClatchie, Erythea 2:78. Gabriel.

Potrero; Wash. Mesas S D Co (Or 1176).

A. MINUTISSIMA Steud, Syn Pl Gram
171. B 2:269 as *Sporobolus ramulosus*.

A. MUCRONATA Presl, Rel Haenk 1:
238. B 2:272.

A. MULTICAULIS Hook f, Fl Antarct
95. Da 19.

AGROSTIS MULTICULMIS Vasey.

Potrero (Or 959).

A. PALLENS Trin Agrost 82; St Pet ac
mem vi, 6, ii, 328 (1845). B 2:273 as
A. exarata.

A. PILOSA Less, in Rich, Voy Astrol
134 t 23. Da 19.

A. SCABEA Willd, Sp Pl 1:370. B 2:
274.

Smith mt, S D Co (H. C. Orcutt); Alas-
ka; Siberia; Tucson; Arizona (Toumey).

A. SCABRUSCULA Buckl, in Phila ac
pr 1862, 90. B 2:274 as *A. scabra*.

A. SCOULERI Trin, St Pet ac mem vi,
6, ii, 329 (1845). B 2:272.

Rosa; San Diego (?Orcutt).

A. STOLONIFERA L, Sp Pl 62. Eu. B
2:271 as *A. alba*.

AGROSTIS TENUIS Vasey.

A. VARIANI Trin Agrost 2:68; St Pet
ac mem vi, 6, ii, 314 (1845). B 2:273.

A. VERTICILLATA Vill Prosp 16. Eu.
Ab 36. Da 18. B 2:272.

Ab 36. Ha 55. Eu. Water Bent-
grass.

Per from slender rtstocks; cu decum-
bent, 3-6 dm hi; oft rting from lower

nodes; sheaths inflated, smooth; lvs
5-10 cm lg, 2-6 mm wide, scabrid above;
panicle loosely contracted, 4-10 cm lg,
8-12 mm wide; empty gm nearly equal,
obtus, 1-nerved, scabrous; callus naked;
flg gm 1 mm lg, 5-toothed, glab; palea
nearly equaling gm.

Cantilles! S D Co (Or 1168). Texas.

A. VIRESCENS HBK Nov Gen et Sp
1:135. B 2:274.

San Diego (Or 1173). Mexico.

A. VULGARIS With, Arr Brit Pl ed 3,
2:132. B 2:271, 274 (of Bol Cat 34 as
A. elata).

Parish, Erythea 3:59.—"Naturalized
about San Bernardino, in meadows and
by roadsides."

Tribe **CHLORIDEAE**. Spkt one-
several-fld in 1-sided spikes or ra-
cemes; the racemes digitate or fas-
ciculate, rarely solitary; flg gm com-
keeled, entire & unarmed or tooth'd
& with 1-3 straight awns.

Spkt imbricated in 2 rows forming uni-
lateral spikes, which are scattered on
a common rachis.

Spartina. Cynodon

Spikes slender, alt & more or less remote
along a common axis. Leptochloa.

Genus **SPARTINA** Schreb.

Per glab grasses with lg horizontal
rtstocks, flat or involute lvs, and an
infl of 1-sided spreading or erect alt
spk; spkt 1-fld, nar, decid, borne in 2
rows on rachis articulated on very sh
pedicels below gm: gm 3; outer 2 empty,
keeled, very unequal, 3d subtending a
perfect fl, keeled, equaling or sh'er than
2d: palea oft larger than its gm, 2-
nerved; sta 3: sty filiform, elongated;
stig filiform, papillose or sh'ly plum-
ose: grain free. Cord-grass.

S. POLIOSA Trin, A 1:47d.

S. GLABRA Muhl, A 1:47d.

Genus **BOUTELOUA** Lagasca.

BOUTELOUA POLYSTACHYA Torr.

Chondrosium polystachyum Bth Bot
Sulph 56.

CD (Or 1468; 2064, near Ft Yuma). Texas

BOUTELOUA RACEMOSA Lag.

Baja mts (Or 671). N. Y.

Genus **CYNODON** Pers.

Per, mostly from running rtstocks,
with sh flat lvs and spicate infl: spks
digitate, slender: spkt 1-fld, secund: gm
3; 2 outer empty, keeled; 3d broader,
membranous, compressed: palea a little
sh'er than flg gm, hyaline 2-keeled: sta
3: sty distinct: grain free. Bermuda-
grass.

CYNODON DACTYLON Pers.

Ab 41. Z 1:185. Da 19. Er 1:100, LA Co.
B 2:292. Eu.

Cu 1-3 dm hi, erect, from lg creeping
and branching stolons, smooth; sheaths
glab or somewhat hairy, crowded at
bases of cu and along stolons; ligule
pilose; lvs 25-50 mm lg, 4-8 mm wide,
flat, rigid, smooth beneath, scabrous
above; spk 4-5, 12-25 mm lg, digitate;

rachis flat, spkt 2 mm lg; empty gm hispid on keel, nar, 1st sh'er than 2d, about 2-3ds as lg as the broad and strongly compressed 3d one.

S D! Cosmopolitan.

Genus **LEPTOCHLOA** Beauv.

Mostly rather tall ann grasses with flat lvs and num spk forming a simple panicle: spkt 2-many-fld, flattened, alt in 2 rows on 1 side of rachis: gm 4-many, the 2 lower empty, keeled, 3-nerved: palea 2-nerved: sta 3: sty distinct: grain free, enclosed in scale and palea.

LEPTOCHLOA FASCICULARIS Gray.

Ft. Yuma, Cal to New England.

LEPTOCHLOA MUCRONATA Kunth.

Cu 3-9 dm hi, erect, branched, smooth; sheaths sh'er than internodes, smooth; ligule sh, lacerate-toothed: lvs 5-18 cm lg, 2-6 mm wide, scabrous; spk num, slender, rigid, ascending or sometimes spreading, lower 5-15 cm lg: spkt com 3-fld, about 2 mm lg; empty gm sh'er than spkt, acute, 1-nerved, slightly scabrous on keel; fig gm 2-toothed at apex, ciliate on nerves.

Ab 42.—"Com in San Joaquin valley and at Imperial along irrigating canals. Monica (Davidson)."

Tribe **FESTUCEAE** Fescue tribe.

Spkt 2-many-fld, com hermaphrodite, pedicellate in racemes or panicles, the latter sometimes dense and spk-like: fig gms com larger than empty gms, awnless or with 1-several straight, rarely bent, awns, which are either terminal or borne just below the apex.

Spkt of 2 kinds in same infl, hermaphrodite and sterile.

A. Fertile spkt 2-3 fld, awnless. *Cynosurus*.

B. Fertile spkt 1-fld, lg awned. *Lam-arekia*.

Spkt all alike in same infl.

A. Plants dioe, saline or maritime.

1. Spkt solitary, concealed in axils of crowded sh and rigid lvs. *Monanthochloe*.

2. Spkt in exserted spk-like panicles. *Distichlis*.

B. Plants not dioe.

1. Flg gm 1-3-nerved or nerveless.

a. Ann infl a lax panicle. *Eragrostis*.

b. Per; infl a spk-like panicle. *Koeleria*.

a. Flg gm 5-many-nerved.

a. Flg gm rounded on back.

Nerves of flg gm prominent. *Melica*.

Nerves of the flg gm obscure or manifest only near apex.

Flg gm obtuse and awnless. *Poa*.

Flg gm acute, oft awned.

Flg gm entire, acute or awned from apex. *Festuca*.

Flg gm com awned just below the entire or 2-toothed apex. *Bromus*.

b. Flg gm compressed or keeled.

Spk nearly sessile in dense 1-sided clusters at ends of the few panicle branches. *Dactylis*.

Spkt 1-2 cm lg; gm sh-awned. *Bromus*.

Spkt sm'er; gm awnless. *Poa*.

Genus **LAMARCKIA Moench**.

LAMARCKIA AUREA Moench.

Ann; cu tufted, 2-5 dm high; sheaths

smooth; blades 5-8 mm wide; panicle linear or oval, 5-8 cm lg; empty gm of fertile spkt nar, keeled, 4-4.5 mm lg; fig gm 3 mm lg, oval, bearing a dorsal awn a little below apex, 6-9 mm lg. Eu.

S D Co (Palmer); C D; Baja; Texas.

MONANTHOCLOE LITTORALIS E.

Cu firm, creeping or ascending; lvs crowded, subulate, com about 1 cm lg, conduplicate; fig gm 9-12-nerved. Da 20, Ab 44. SD salt marshes!

S D (Or 512); Magdalena Isl. (Br).

Genus **DISTICHLIS Rafinesq.**

D. MARITIMA Raf, J Phys 89:104 (1819). Da 19. Bloch, Er 2:163 (medical use).

Chollas (Or 504); Baja mts (Or 1161).

Uniola spicata L.

Distichlis spicata Greene, Cal ac b 1:415.

D. SPICATA Greene, Cal ac b 2:415. Ha 57. Ab 47.

Cu rather stout, from creeping scaly rt-stock, rigid, erect, 1-5 dm hi; sheaths num, glab, bearded at throat; blades pale g, 3-10 cm lg, 3 mm wide at base, spreading, rigid, margins minutely ciliate; panicle spk-like, 3-8 cm lg, its branches appressed; spkt 8-12 mm lg, keeled, empty gm obtuse, 1st 2-3 mm lg, 2d 4 mm lg; fig gm of sterile spkt 3-5 mm lg, of fertile spkt 5-6 mm lg. Salt grass.

E. ALEA J&C Presl, Rel Haenk 1:279. B 2:315.

ERAGROSTIS CURTIPEDICELLATA Bk.

Ft. Yuma, Cal. (Or 2078).

E. FENDLERIANA Steud, Syst Pl Gram 278. Mex. B 2:309.

ERAGROSTIS MAJOR Host.

Da 19, Er 1:101, LA Co. Ab 45.

Cu 2-6 dm hi, erect or decumbent at base, com branched, smooth; sheaths sh'er than internodes, sparingly pilose at throat, otherwise smooth; blades 5-15 cm lg, 2-6 mm wide, flat, smooth beneath, scabrous above; panicle 5-15 cm lg, the branches spreading or ascending, 2-4 cm lg; spkt 8-35-fld, 5-15 mm lg, about 3 mm wide, flat; empty gm obtuse, 2-2.5 mm lg, lateral nerves prominent.

Rosalia (Orcutt).

E. MEGASTACHYA Link, Hort Berol 1:187. B 2:315 as major.

B 2:315. Da 19.

ERAGROSTIS NEOMEXICANA Vasey.

Prescott, Arizona (Toumey).

ERAGROSTIS OXYLEPIS Torr.

S D! Texas, Kansas.

ERAGROSTIS PILOSA Beauv, Agr 71.

Da, Er 1:101, LA Co. Ab 45. Z 1:184.

Parry, Wyo, 16. Da 19. Ab 45.

Ann, 4-5 dm hi, somewhat tufted, smooth; sheaths smooth, sh'er than internodes; lvs flat, 8-15 cm lg, smooth; panicle spreading, 15-30 cm lg; rays decoupled, smooth or slightly beared in axils; spkt on pedicels 4-8 mm lg, narly linear, 5-8 mm lg, 7-20-fld, dark lead color or plish; empty gm lanceolate, 1st 1.5 mm lg, 2d 2 mm lg, fig gm ovate, 1.5-1.8 mm lg; palea about equaling its

gm, scaberulous on keel; grain 1 mm lg. Parish, Erythraea 7:89.

Eragrostis orcuttiana Vasey, U S Na hb 1:269.

Eragrostis mexicana McClatchie, Fl Pasadena 628; Davidson, Pl L A Co 32 (not Link).

Australia; naturalized throughout southern Cal.

ERAGROSTIS POAEOIDES Beauv.

Variety *MEGASTACHYA* A. Gray.

Smith mt, S D Co (H. C. Orcutt).

E. REPTANS Ness Agrost Bras 514. B 2:314.

Genus *KOELERIA* Pers.

KOELERIA CRISTATA Pers.

Per; cu erect, tufted, 3-7 dm hi; sheaths smooth, equaling or sh'er than internodes; basal lvs $\frac{1}{4}$ - $\frac{1}{2}$ as lg as cu, cu lvs 2-4, 6-12 cm lg, all glab; panicle spk-like, somewhat lobed and interrupted, 5-12 cm lg; axis and branches soft-pubescent; spkt 2-4-fld, 4-5 mm lg; 1st gm 2.5-3.5 mm lg. 2d 3-4 mm lg; flg gm = 2d empty one.

S D (Or 495); Sauzal, Baja (Or 1426); Julian, Cal. (Or 1990); Arizona (Or 2534; 2474).

Genus *MELICA* Linnaeus.

MELICA FRUTESCENS Scribn.

San Diego; Baja; Mexico.

MELICA IMPERFECTA Trin.

Ab 46. Da 19.

Cu slender, somewhat tufted, 3-10 dm hi; sheaths exceeding internodes; blades 6-7, flat or becoming involute, com glab or more or less scabrous, 15-20 cm lg, about 2 mm wide; panicle 2-3 dm lg, its branches in remote clusters, unequal, the longer 5-7 cm lg; spkt scabrid 1-fld, with an imperfect fl or rarely 2-fld; empty gm ovate or nearly so, 1st about 3 mm lg, 3-nerved, second slightly lg'er, 5-nerved; flg gm about 4 mm lg, ovate, obtuse, 7-nerved, oft p'lish; palea nearly as lg as its gm.

Baja mts (Or 1170); Guadalupe; Cruz.

Variety *FLEXUOSA* Boland. Ab 46. Ha 59. Da 19.

Much resembling type in habit and foliage, but branches of panicle few-fld, com in pairs, oft reflexed; spkt larger, acuter, paler, more coriaceous. Monica mts (Davidson). Limber Melic-grass.

Variety *MINOR* Scribn.

Ab 46.—"San Fernando mts, near Chatsworth Park."

Com densely tufted cu compressed or angular; lvs mostly basal; branches of panicles sh, divergent or reflexed; spkt sm'er than in type; outer gm sh'er and more obtuse."

Variety *REFRACTA* Thurber Da 19. Ab 47.

Densely velvety-pubescent thruout; panicle slender, flexuous, its branches few, distant, strongly refracted: spkt very acute, Monica.

MELICA POAEOIDES Nuttall.

Baja (Or 513).

Genus *POA* Linnaeus.

P. ABBREVIATA R Br in Parry, 1st voy suppl 287. B 2:312.

P. AIROIDES Nutt Gen 1:68. Da 19. B 2:308 as *Atropis distans* Griseb.

P. ALPINA L sp pl 67. B 2:312. Ha 60.

Mt spear-grass.

P. ANDINA Nutt, herb, ex Wat Bot King 388. B 2:309 as *Atropis Californica*. Parry, Wyo 16.

P. ANGUSTIFOLIA Reichb, Ic Fl Germ t 160. B 2:313 as *serotina*.

P. ANNUA L, sp pl 68. B 2:311. Z 1:186. Ab 49. Da 19, Er 1:101 (LA Co). Eu. Br 1:205 Cruz.

Santa Cruz Island (Br).

Ann; cu weak, compressed, 5-30 cm lg, decumbent; ligule 2-3 mm lg; blades of sterile shoots $\frac{1}{2}$ -2-3ds as lg as cu; cu-lvs 3, flat; panicle subsecund, ovoid, 2-5 cm lg, its branches com in pairs, the lg'est 2.5 cm lg, bearing spkt above middle; spkt nearly sessile, 3-7-fld, 4-6 mm lg; empty gm compressed, about 2.5 mm lg; flg gm ovate, smooth, arose at apex, 2.8-3.1 mm lg, with soft hairs on keel and lower part of lateral nerves; palea 2.5-2.8 mm lg, ciliate or pubescent on keels. Eu.

POA BIGELOVII Vasey and Scribn.

S D mts; Baja; Texas; Colo.; Utah.

P. BUCKLEYANA Nash, Torr cl b 22: 465 (1895). Ha 60. Bunch red-top.

P. CALIFORNICA Scribn, Torr cl b 10:31 (1883).—(Steud. Gram 261 = *Douglasii* fide B 2:314).

P. CAPITATA Nutt, Am phil sc tr, ns, 5:146 (1837). B 2:315 as *Eragrostis reptans*.

P. CROCATA Michx Fl 1:68. B 2:313 as *serotina*.

P. DOUGLASII Nees, Ann Nat Hist sr 1, 1:284 (1838). B 2:314.

POA FENDLERIANA Vasey.

Per; cu tufted, 3-7 dm hi, com dioe; lvs of sterile shoots com flat, 6-10 cm lg, 2 mm wide, cu-lvs 2-3, conduplicate, 1-10 cm lg; ligule 3-5 mm lg; panicle spk-like, 8-12 cm lg, its branches in 2's or 3's, fl-bearing on upper half; spkt ovate-lanceolate, flattish, oft tinged with p. 3.7-fld empty gm nearly equal, compressed, 4-5 mm lg flg gm oblg, 4-5 mm lg, oft denticulate at apex, scabrous; palea lanceolate, scabrous, sh'er than or equaling its gm.

S Ber; S F; Colo.; N. M.; Mexico.

P. FLUITANS Scop Fl Carn, ed 2, 1:73. B 2:307 as *Glyceria* f.

P. GLUMARIS Trin, Mem Ac Petersb sr 6, 1:379. B 2:313.

P. HOWELLII Vasey & Scribn, Vasey, Cat-Grass, US 32. Br 1:205 Cruz. A 1:191 Ore.

Variety *CHANDLERI* Davy. A 1:191 fdr.

P. HYPNOIDES Lam Ill 1:185. B 2:315 as *Eragrostis reptans*.

P. INFIRMA HBK, Nov Gen et sp 1:158. Ab 50.

Ann; cu slender, spreading, 1-2 dm lg; sheaths compressed, loose; ligule 2 mm lg; lvs smooth; panicle ovoid, 2-4 cm lg, its branches mostly in pairs bearing 2-5 spkt above; spkt subsessile, oblg, 2-4-fld, 3-4 mm lg; empty gm scarious on tips and margins, 2d larger than 1st, 2-2.2 mm lg; flg gm broadly oval, about 3 mm lg, scarious toward apex and on margins, ciliate on keels and margins below; palea nearly equaling gm, ciliate on keels.

P. KAIBENSIS Jones, Er 4:36 based on

festucoides Jones, Cal ac pr sr 2, 5:722.
F. KINGII Wat, Bot King 387. B 2:313 as glumaris.

F. LAXA Haenke in Jirasek, Beob Ries 118 (1791). Eu. B 2:312.

F. LEPTOCOMA Trin, in Mem Ac Peters sr 6, 1:374 (1831). B 2:313 as stenantha. Trin.

F. MICHAUXII Kunth, Rev Gram 1:111.

F. NERVATA Wiled, sp pl 1:389. B 2:308 as Glyceria n.

F. NUTKAENSIS J&C Presl, Rel Haenk 1:272. B 2:308 as Atropis distans (= Glyceria d fide IK).

F. NUTTALLIANA Schult Mant 2:303. B 2:308 as Atropis distans (= Glyceria d, fide IK).

F. OECUTIANA Vasey. A 1:99 fdr.

F. PAUCIFLOREA Bth ex Vasey, Grass US 42. Da 19.

F. PRATENSIS L, sp pl 67. B 2:312. Z 1:186. Ab 50. Da 19, Er 1:101 LA Co. (Kentucky Blue-Grass). Per; cu

terete, glab from running rtstocks, 3-6 dm hi; sheaths smooth; ligule truncate, 1.5 mm lg; lvs of sterile shoots flat, abruptly concave-pointed, those of cu 3, smooth or scabrous; panicle com rather open pyramidal, its branches in half whorls of 3-6, densely fld on upper half; spkt 3-6-fld, 4-7 mm lg; empty gm acute, scabrous on keels, first 2.5-3 mm lg, 2d 3-3.5 mm lg; fig gm webbed at base, scabrous toward apex, pubescent on marginal nerves and on keel below; palea linear, 2.5-3 mm lg, scabrous on keels.

F. PROCUMBENS Curt Fl Loud fasc 6 t 11. B 2:309 as Atropis p (= Glyceria p, fide IK).

F. REPTANS Michx, Fl 1:69 t 11. B 2:315 as Eragrostis r.

F. RUPESTRIS With, Bot Arr Brit pl ed 3, 2:146 t 24. B 2:309 as Atropis procumbens (= Glyceria p fide IK).

F. SCABRELLA Bth ex Vasey, Grass US 42. Ab 51.

Per; cu slender, 4-7 dm hi, scabrid; lvs of sterile shoots flat or conduplicate, 12-20 cm lg, 1-2 mm wide, those of cu 2-3, 5-7 cm lg; ligule 5-12 mm lg; panicle rather open, 12-15 cm lg, its branches in pairs, the longest 5-7 cm lg; spkt fl-bearing at least above middle; spkt 5-6 mm lg, 3-5-fld; 1st empty gm 2.5 mm, 2d 3 mm lg; fig gm 3 mm lg, rough, hairy on lower part of nerves, apex denticulate; palea slightly sh'er.

F. SEBOTINA Ehrb Beith 4:83. Gman 629. B 2:313.

F. STENANTHA Trin, Mem ac Petersb sr 6, 1:376. Ladeb Fl Ross 4:372. G 8:409. B 2:313.

F. TRIVIALIS L, sp pl 67. B 2:313.

F. TENUIFOLIA Nutt, Wat, bot King 387. B 2:310 as Atropis t. Da 19.

Chollas (Or 1071). Baja (Or 1143, var. rubra).

Variety **CALIFORNICA** Vasey Da 19.

POA UNILATERALIS Scribner.

Vasey, grasses Pac Slope 2 t 85.

Parish, Erythra 3:59.—Bear.

S F; San Bernardino (Parish).

Genus FESTUCA Linnaeus.

FESTUCA MICROSTACHYS Nutt.

Ann, cu slender, erect, tufted, 1-4 dm hi; sheaths sh'er than internodes, smooth or pubescent; ligule .5 mm lg or less; cu lvs 2-4, erect, 3-8 cm lg, very nar; panicle 3-10 cm lg, its branches secund, divergent, remote, the lg'er 3-5 cm lg spkt remote, 5-10 mm lg, 1-5 fld; empty gm awnless, scabrous or glab, 1st 3 mm 2c 5 mm lg; fig gm 3-4 mm lg, scabrous-awn slender, 6-8 mm lg Ab 51.

Mesas. S D (Or 1073); Baja (Or 1275).

Variety **CILIATA** A. Gray.

S D! San Esteban, Baja (Br).

FESTUCA MYURUS L.

S D (Or 521); Baja (Or 1433); Cruz; Rosa.

FESTUCA TENELLA Willd.

Pt, Loma, S D (Or 1063); Baja mts (Or 1142, "a tall form"). Arizona (Or 1530, 1535).

Genus DACTYLIS Linnaeus.

DACTYLIS GLOMERATA L.

Da 19. Ab 48.

Cu 6-12 dm hi, tufted, erect, simple, smooth; sheaths sh'er than internodes, smooth or rough; ligule 2-4 mm lg; blades 7-20 cm lg, 2-6 mm wide, flat, scabrous; panicle 7-18 cm lg, its branches spreading or ascending in fl, erect in fr, the lower 25-60 mm lg; spkt in dense capitate clusters, 3-5 fld; empty gm 1-3-nerved, 1st sh'er than 2d; fig gm 4-6 mm lg, rough, pointed or sh awned, ciliate on keel.

Europe, Asia; widely naturalized.

Tribe **AVENEA**. Spkt 2-several fld; outer empty gm com lg'er than 1st gm; 1 or more of flg gm awned on back or from between teeth of bifid apex; awn com twisted or geniculate. Out tribe.

Spkt articulated with the pedicels below the empty gm. Holcus.

Spkt not articulate below empty gm.

1—Awns dorsal.

a Spkt sm, under 1 cm lg. Descham'a.

b Spkt 1 cm or more lg. Avena.

2—Awns terminal, rising from between the lobes or teeth. Danthonia.

Genus **DESCHAMPSIA** Beauv.

Ann or per grasses with flat or convolute lvs and contracted or open panicles: spkt 2-fld; both fl perfect, the hairy rach extended beyond or rarely terminated by a stam one: gm 4; the 2 outer empty, keeled, acute, membranous, shining, persistent; flg gm similar in texture, decid, bearing a dorsal awn, toothed at apex: palea nar: sta 3: sty distinct: grain oblg, free and enclosed in gm. Hair-grass.

D. BREVIFOLIA R Br, in Parry Voy 191. B 2:298 as *Aira caespitosa*.

Beauv, Agros 91 t 18 f 3. Mohave. B 2:297 as *Aira C*.

DESCHAMPSIA CAESPITOSA Beauv.

DESCHAMPSIA CALYCINA Presl.

J & C Presl, Rel Haenk 1:251. Da 19.

Ab 39. B 2:298 as *Aira danthouoides*.

Ann; cu slender, 1-6 dm hi; sheaths smooth; lvs few, 3-6 cm lg, 1 mm wide or less; panicle spreading, about 1-3d length of cu, bearing 1-5 spkt above middle, the lowest of which are on spreading pedicels; spkt 2-fld; empty gm about 2 mm lg, hairy below, shining above, 5-nerved, emarginate with 4 minute ciliate teeth; awn inserted below middle, about 6 mm lg, bent near middle and twisted below.

Bear; Panamint mts (Coville).

D. DANTHONIOIDES Munro, Bth Pl Hartw 342. B 2:298 as *Aira dant*.

D. ELONGATA Munro in Bth Pl Hartw 342. B 2:298 as *Aira el*.

D. GRACILIS Vasey. A 1:347 fdr.

D. HOLCIFORMIS J & C Presl, Rel Haenk 1:251. B 2:297 as *Aira h*.

Genus **AVENA** Linnaeus.

L. Syst ed 1 (1735).

AVENA BARBATA Brot.

Fl Lusit 1:108. Dewey, Er 5:29. Parish, Er 6:85.

McClatchie, Erythea 2:78. Pasadena; Catalina.

A. CERNUA Kunth, En Pl 1:306. B 2:295. = *Trisetum cernuum* fide IK.

L, sp pl 80. Ab 39. Z 1:185. B 2:294. P 1:93, Mig. Da 19. Greene, Cal ac b 2:415, Cruz. Eu.

AVENA FATUA Linn.

Variety **GLABRESCENS** Coss. Ab 40.

Parish, Erythea 6:86. Nordhoff (Hubby), and San Bernardino, Cal.

Florets clothed with hairs only on the

rachilla and at the base of the flowering glumes. In aspect not different from the type.

A. MOLLIS Michx, Fl Am Bor 1:72 B 2:296 as *Trisetum subspicatum*.

A. SATIVA L, sp pl 79. Ab 40. Cult cat.

Genus **DANTHONIA** DC.

Ann or per grasses with flat or convolute lvs and contracted or open panicles: spkt 3-many-fld, fl all perfect or upper stam; rach pubescent extending beyond fl: gm 5-many, 2 outer empty, keeled, acute, sub-equal, persistent, com extending beyond uppermost flg gm; flg gm rounded on back, 2-toothed, decid; awn arising from between acute or awned teeth, flat and twisted at base, bent: palea hyaline, 2-keeled near margins, obtuse or 2-toothed: sta 3: sty distinct: grain free, enclosed in gm.

DANTHONIA CALIFORNICA Bol.

San Diego to Oregon.

Tribe **HORDEA**. Spkt 1-fld, com hermaphrodite, sessile along the common rachis, forming a simple or compound spike; gm awned or awnless. Barley tribe.

A. spkt 1 at each joint of rachis.

1. spks very slender; spkt 1-2-fld. Lepyturus.

2. spks stout; spkt com 2- (or more) fld. Spkt placed with 1 edge against rachis. Lolium.

Spkt placed with 1 side against rachis. Agropyron.

B. spkt 3 at each joint of rachis. Hordeum.

C. spkt 2 at each joint of rachis.

Axis of spk continuous; empty gm entire. Elymus.

Axis of spk articulate; empty gm com 2-many-cleft. Sitanion.

Genus **LOLIUM** Linnaeus.

Ann or per, with simple erect cu, flat lvs and terminal spk: spkt several-fld, 1, sessile, alt in notches of com continuous rachis, compressed, edge of spkt turned toward rachis: gm rigid, 1st in lateral and the 2 lower in terminal spkt empty; flg gm rounded on back, 5-7-fld: palea 2-keeled: sta 3: sty distinct, very sh; stig 2: sd adherent to the palea. Darnel or Ray-grass.

L. ARVENSE With Arr Brit pl ed 3, 2: 168 (=temulentum fide IK). Schrad Fl Germ 399; Sm Eng Fl 1:175 (=remotum fide IK). Da, Er 1:102 LA Co. B 2:323 as temulentum.

L. ITALICUM A Br, in Fl 17:259. B 2: 323, as cult var of perenne, =multiflorum fide IK.

L. MULTIFLORUM Lam, Fl Fr 3:621. B 2:323 as cult var of perenne.

L. PERENNE L, sp pl 83. B 2:323. Ab 57. Z 1:186. Da 19, Er 1:102, 103 LA Co.

English Raygrass. Per; cu 3-6 dm hi, erect or com geniculate at base, smooth; sheaths smooth; lvs scabrid on edges and upper side; spk 1-3 dm lg, bearing 6-10 spkt; rachis smooth, channelled: spkt 6-8 mm lg, smooth, shining, 7-11-fld; empty gm strongly ribbed, much sh'er

than spkt, flg gm linear-oblg, terete, obtuse to sh'ly awned, ribbed.

Variety **MULTIFORUM** Ab 58.

Ann or bien; spk oft p'ish, somewhat curved; spkt 15-30-fld; flg gm com with a sh, slender awn.

L. TEMULENTUM L. sp pl 83. Ab 58. Da 19, Er 1:102, 103 LA Co. B 2:323. Z 1:186.

Darnel. Ann; cu rather stout, 3-8 dm hi, smooth; sheaths smooth, com somewhat exceeding nodes; spk stout, with 9-15 spkt; spkt 5-7-fld; empty gm not ribbed, = or com exceeding spkt; flg gm turgid, awnless or com with a straight awn 2 cm lg or less.

Chollas (Or 1067); widely naturalized.

Variety **ARVENSE**. Da 19.

AGROPHYRON J. Gaertn. in Nov Comm Petrop 14, 1, 539 (1770).

Ann or per, with flat or involute lvs and terminal spk: spkt 3-many-fld, sessile, 1, alt at each notch of rachis, sides of spkt turned toward rachis; lower gm empty, nar'er and com sh'er than flg gm, acute or awned; flg gm rigid, rounded on back, 5-7-nerved, com acute or awned at apex; palea 2-keeled, keels oft ciliate; sta 3: sty very sh, distinct; sd pubescent at apex, com adherent to palea. Wheat-grass.

A. CANINUM Reichenb, Sc Fl Germ t 119. B 2:324 as Triticum c.

A. DIVERGENS Nees ex Steud Syn Pl Gram 347. B 2:324 as Triticum strigosum.

Mont; Colo; N M; Cal; Wash.

A. GLAUCUM R & S Syst 2:753. A 1: 41 d. Eu.

A. PABESUM Scribn & Sm. A 1:42 fdr. Ab 59.

Variety **LAEVE** Scribn & Sm. A 1:42 fdr. Ab 59. Hall 54?

A. BEPENS Beauv Agrost, 102. P 1:93 Mig. Reich Ic Fl Germ t 120. Greene, Cal ac b 2:415, Cruz. Br 1:218 Rosa. B 2:324 as Triticum r.

Cruz; Rosa; Potrero, Chollas (Or 498).

A. TENEBRUM Vasey. A 1:42 fdr. Hall 54.

Genus **HORDEUM** Linnaeus.

Ann or per with flat lvs and terminal cylindric spk: spkt 1-fld, com in 3's at each joint of rachis, the lateral com sh-stalked and imperfect; rach produced beyond fl: empty gm 2, all alike and subulate; flg gm nar-lanceolate, rounded on back, rigid, persistent, obscurely 5-nerved above, com awned; palea nearly = gm, 2-keeled: sta 3: sty very sh, distinct; sd com adherent to gm, hairy at summit. Barley-grass.

H. ADCENDEMS HBK. A 1:47d.

H. GUSSONEANUM Parl Pl Palerm 244 in obs. Sicily. Ab 60.

Much resembling *H. maritimum* in habit, but inner empty gm only nar'ly flattened instead of wing-margined along inner side, 0.5 mm wide.

HORDEUM JUBATUM L.

L, sp pl 85. Da 19. B 2:325.

San Diego, Cal. (Or 522).

H. MARITIMUM With Arr Brit Pl 172. Eu. Africa. Ab 60. SD.

Ann, rather glau; cu more or less decumbent at base, tufted, 1-2 dm hi; spk

2-4 cm lg, rather pale; lateral spkt neutral or sometimes stam, their inner empty gm obliquely lanceolate, 1 mm wide; fertile fl sessile.

HORDEUM MURINUM L.

L, sp pl 85. Ab 60. Da 19, Er 1:102 LA Co. B 2:325. Z 1:184.

Greene, Cal ac b 2:415, Cruz. Br 1:218 Rosa.

Ann; cu tufted, decumbent at base, 2-5 dm hi; upper sheaths smooth, scarious on margins, oft dilated, lower pilose; lvs softly pubescent and scarious; spk stout, compressed, 5-10 cm lg; central spkt pedicelled; empty gm lanceolate, flat, ciliate; awns 18-24 mm lg; outer gm empty gm of lateral spkt similar, inner awn-like and not ciliate; flg gm about 12 mm lg, scarious above; awn 2-5 cm lg; flg gm of the lateral spkt sm'er; awn 15-40 mm lg; palea ciliate on keels. Fox-tail.

Guadalupe; Cruz; Rosa.

HORDEUM NODOSUM L.

L, sp pl ed 2, 126. = secalinum fide IK. Ab 60. B 2:325.

Per; cu erect, slender, 2-6 dm hi, sheaths glab; lvs oft deflexed, flat, scarious, 5-8 mm wide; spk slender, compressed, com nodding, 6-10 cm lg, 8-10 mm wide; rachis very brittle; lateral spk awnless, stam or neutral; fl of central, spkt sessile; empty gm not flattened or dilated above base, all alike and subulate; flg gm including its awn 14-18 mm lg; awn com brownish or p'ish.

Bear valley (Parish).

Variety **DEPRESSUM** Scribn & Smith. Ab 60.

Lower and more tufted than type; cu geniculate at base or erect, 1-3 dm hi; upper sheaths inflated; lvs sh'er than type, com pubescent; empty gm 18 mm lg; fertile flg gm with an awn equaling its own length.

HORDEUM PRATENSE Huds.

Smith mt, S D Co (H. C. Orcutt); El Rancho Viejo, Baja (Br).

HORDEUM PUSILLUM Nuttall.

McClatchie, Erythea 2:78. Catalina.

Mesas, S D (Or 117); Baja (Or 1430); Arizona (Or 2514, a roadside weed near Congress; 2522, along irrigating canal).

Genus **ELYMUS** Linnaeus.

Mostly erect rather tall, with flat lvs and closely fld terminal spk: spkt 2-6-fld, uppermost imperfect, sessile, in 2's, rarely in 3's or 4's, at alt notches of the continuous or articulate rachis; rach articulate above empty gm and between fls: empty gm 2, nearly equal, rigid, nar, 1-3-nerved, acute or awn-pointed, persistent and subtending the fls like an inv; flg gm sh'er, rounded on back, obscurely 5-nerved, obtuse, acute or awned from apex; palea a little sh'er than gm, 2-keeled: sta 3: sty sh, distinct; sd adherent to gm and palea hairy at summit. Wild rye.

ELYMUS AMERICANUS Vasey.

Sausal, Baja (Or 1427).

E. CONDENSATUS J & C Presl. Rel Haenk 1:265. Da 20. Greene, Cal ac b 2:415 Cruz. Br 1:218 Rosa. P 1:93 Mig. Ab 61.

Cu stout, from stout creeping rt-stocks, 10-25 dm hi; sheaths smooth; ligule 2-4 mm lg; lvs 3-5 dm lg, 25 mm wide or less at base, lg acuminate, smooth or nearly so toward base, becoming scabrous toward apex, flat, edges somewhat involute above; spk rather dense and ample or somewhat lobed, 2-5 dm lg, erect; spkt imbricated in 2's or 3's or more, 4-5-fld; empty gm subulate, scabrid, about 12 mm lg; fig gm scabrous below, 11 mm lg, 3 mm wide, 7-nerved; palea equaling gm, scabrous and ciliate on keels above.

E. GLABER Davy, Cal Univ pub bot 1:57 based on *Sitanion glabrum* J. G. Smith. Jac.

E. GLAUCUS Buckl, Phil ac pr 1862:99. Ha 57. = *sibiricus* fide IK. Ab 62.

Cu erect and tufted, from stoloniferous rt-stocks, 6-10 dm hi, smooth; sheaths smooth or minutely scabrid; ligule about 0.5 mm lg, entire; lvs flat, scabrid on both sides, 6-10 mm wide, the lowest about 2 dm lg; spk linear, erect, 6-15 cm lg, 5-8 mm wide; spkt com in 2's, sometimes in 3's, 3-4-fld; empty gm 8-12 mm lg; awn-pointed, scabrid on the 2-4 prominent nerves; fig gm scabrid above, 9-12 mm lg, tapering into a straight awn 7-14 mm lg; palea scabrid, 9-10 mm lg, emarginate; rachis scabrid on margins.

Variety **MAXIMUS** Davy, in Jepson, Fl Mid w Cal 79 (1901). Ha 57.

E. MULTISETUS Davy, Cal Univ pub bot 1:57, based on *Sitanion multisetum* J. G. Smith.

E. ORCUTTIANUS Vasey. A 1:46 fdr. Da 20. Ab 62. Elysian Park, LA.

E. PARISHII Davy & Merrill. A 1:46 fdr.

L. sp pl 83.

E. PUBIFLORUS Davy, Univ Cal pub bot 1:58 based on *Sitanion pubiflorum* J. G. Smith.

ELYMUS SIBIRICUS L.
McClatchie, *Erythraea* 2:78. Gabriel mts.

ELYMUS SITANION Scht.

Schult, Mant 2:426. Da 20.

Baja mts (Or 1171); Arizona (Or 2533).

ELYMUS TRITICOIDES Nuttall.

Buckl, Phil ac pr 1862:99. = *condensatus* fide IK. Ab 61. Ha 58.

McClatchie, *Erythraea* 2:78. Gabriel mts.; Catalina.

Cu rather slender, smooth and com glau, from slender rt-stocks, 6-10 dm hi; sheaths smooth; ligule a ciliate ring; lvs 15-30 cm lg, 5-8 mm wide, scabrous on margins and nerves above; spk 9-18 cm lg, about 1 cm wide or less; rachis puberulent and with a nar ciliate wing; spkt in 2's or 3's, rather distant below, crowded in middle, oft single above, 4-6-fld; empty gm 8-10 mm lg, subulate, scabrous on nerves above; fig gm 6-10 mm lg, 3 mm wide, 9-nerved, glab; palea about equaling its gm, scabrous on keels.

Genus **SITANION** Rafinesque.

Caespitose, per, with com flat lvs and bearded spks: spkt 1-3, com 2, at each joint of the articulate rachis of spk, 2-several-fld; empty gm 2 or sometimes 3, many-parted from near base, or bifid, or subulate and entire, awned; fig gm

terminating in 1 awn or trifid or 3-awned; palea as lg as its gm, entire, bidentate or 2-awned; sta 3: sty sh: sd adherent to its gm and palea, hairy at summit.

S. ANOMALUM Smith. Ab 64.

Cu erect, scarcely or not at all tufted, 5-6 dm hi, smooth; sheaths smooth or lower sparsely hirsute, ciliate on margins, sh'er than internodes; ligule 1 mm lg; lvs 4-12 cm lg, 3-4 mm wide, scabrous throat; spk rather loosely fld, 1-1.5 dm lg, r'ish; spkt 4-fld; empty gm lanceolate, entire, those of lowest spk bifid above middle with short awn 1-4 cm lg; fig gm 10 mm lg, linear-lanceolate, smooth below, scabrous above, 3-awned; lateral 1-2 mm lg, middle one erect 3-4.5 cm lg; palea sh'er than its gm, scabrous on margins.

S. CALIFORNICUM Smith. Ab 64.

Cu tufted, ascending, 1.5-2.5 dm hi, rather densely pubescent above; lower sheaths densely hirsute, upper minutely puberulent; ligule obsolete; lvs 2-8 cm lg, 3-4 mm wide, scabrous above and on margins, densely puberulent on back; spk rather loosely fld, 5-8 cm lg; lowest fl of one or both spkt sterile; empty gm 4, entire, 3-5 mm lg; fig gm linear, 10-12 mm lg, finely scabrous, awn stout, about 4 cm lg; palea 2 mm sh'er than its gm, scabrous on nerves below; internodes of rachis 4-5 mm lg, scabrous throat.

S. JUBATUM Smith. Ab 63.

Cu erect, 6-9 dm hi, smooth; lower sheaths hirsute, upper minutely pubescent or sparsely hirsute, becoming smooth; ligule 1 mm lg; lvs 10-8.1 cm lg, 3-5 mm wide, strigose-pubescent throat and sparsely hirsute above, mid-nerve prominent beneath; spk 1-2 dm lg, densely fld; empty gm 4, 3-many-parted from about middle, lobes setaceous, mostly 8-10 cm lg; spkt 2-4-fld, the 2d hermaphrodite, other sterile or upper stam; fig gm linear-lanceolate, 8-10 mm lg, smooth below, sparsely scabrous above, 5-nerved, trifid at apex, lateral lobes setaceous, the middle prolonged into a slender scabrous awn, 8-12 cm lg; internodes of rachis 5-7 mm lg, glab.

S. MULTISETUM Smith. Ab 63.

Cu tufted, 3-5 dm hi, glab or minutely strigose-pubescent; sheaths scariously on margin, strigose-pubescent and hirsute; ligule very sh; lvs 5-10 cm lg, erect or ascending, linear, pungently pointed, sparsely hirsute on back, scabrous on margins, hirsute and scabrous above; spk erect, 5-8 cm lg, com r'ish; com only 1 spkt at each joint fertile; empty gm 3-many-parted nearly to base; awns slender, scabrous, mostly 2-6 cm lg; lowest fig gm of sterile spkt subulate, resembling seg of empty gm; fig gm of fertile spkt 8-9 mm lg, smooth below, keeled and scabrous above, 3-awned, middle awn 5-6 mm lg; palea equaling its gm; internodes of rachis 4-5 mm lg, smooth, scabrous on margins, compressed.

CALIFORNIA PLANTS.

An Enumeration of Genera and Species, and the principal synonyms, arranged as an alphabetical index to certain botanical literature, chiefly West American.

EDITORIAL PREFACE: The botany of California is yet too imperfectly known to permit of the publication of even an approximately complete list of the plants occurring within its boundaries. The undersigned also lacks access to all the botanical literature pertaining to the subject, and in compiling the present catalogue has very probably omitted numerous species which should have been included. The citations of the earliest published descriptions are mainly drawn from Hooker and Jackson, Index Kewensis. As much difference of opinion exists as to nomenclature, an attempt is made to give authority for each name treated as a synonym.—Charles Russell Orcutt.

BOTANY OF SOUTHERN CALIFORNIA:

While the following list enumerates nearly all the known genera, species and varieties of plants occurring in California, the writer has added descriptions of the genera and species credited to the southern counties of the state not already described in volume one of American Plants—the plan being to make the two volumes a fairly complete working manual for the counties of San Diego, Orange, Imperial, Riverside, Los Angeles, Ventura and Santa Barbara. If the present plan meets with sufficient encouragement, it is intended to issue other volumes containing descriptions of the remaining genera and species considered valid that occur in California.

ALPHABETICAL LIST OF GENERA AND SPECIES.

ABAMA Adans Fam 2:47 (1763). = *Narthecium* fide IK.

A. CALIFORNICA Heller, Cat ed 1, 3 (1878), based on *Narthecium Californicum* Baker. = *A. occidentalis* M 1:47 (1904).

A. OCCIDENTALIS M 1:47 (1904), based on *Narthecium ossifragum* var. *occidentalis* G.

ABDEA P 4:205 (D 1900).

A. BRACHYCARPA P 4:207, based on *Draba brachycarpa* Nutt.

ABIES L, Fl Lapp 227 (1737). A 340 d.

A. ALBERTIANA A Murr, Hort sc pr 3:149 (1863) = *Tsuga Mertensiana* Carr fide B 2:121.

A. AMABILIS Forb Pin Wob 125 t 44.

A. AMABILIS Parl in DC Prodr 16:II, 426 in part. = *A. subalpina* fide IK.

A. AMABILIS Douglas? (not of later authors) = *A. grandis* fide B 2:118.

A. AMABILIS (?) Wat, bot King 333 = *A. concolor* fide B 2:118.

A. AMABILIS of California botanists = *A. magnifica* fide B 2:119.

A. BRACTEATA H & A bot Beech 394. B 2:118.

A. BRIDGEI K 2:14 (1863). = *Tsuga Mertensiana* fide B 2:121, et Curran, Cal. ac b 1:147.

A. CONCOLOR Lindl & Gord, in S Hort sc 5:210 (1850). B 2:118. Z 2:160. Ab 6. A 1:340 d.

Variety **LOWIANA**. A 1:341 as *A. concolor*.

A. DOUGLASII Lindl in Penny Cyclop 1:32. = *Pseudotsuga Douglasii* fide B 2:120. Nutt, Sylva 3:129 t 115. Newb Pac Ry R 6:54 t 8.

A. GRANDIS Lindl in Penny Cyclop 1:30. B 2:118 ("of Cal botanists = *A. concolor*").

A. HOOKERIANA A Murray, Edinb N Phil J n sr 1:288 (Ja-Apr 1855). = *Tsuga Hookeriana* fide IK. = T. Pattoniana fide B 2:121.

A. LASIOCARPA in nurseries = *A. Lowiana* fide B 2:118.

A. LASIOCARPA Hook, Fl Bor Am 2:163.

A. LASIOCARPA Lindl & Gord, Hort sc J 5:210 (1850) = *A. grandis* and *A. Lowiana* fide IK.

A. LOWIANA A Murray, Syn Var Conif 27. = *A. concolor* fide B 2:118, et A 1:341.

A. MACROCARPA Vasey, Gard Mo, Ja 1876. = *Pseudotsuga Douglasii* var. *macrocarpa* fide E in B 2:120.

A. MAGNIFICA A Murray, Roy Hort sc pr 3:318 (1863). B 2:119. Z 2:160.

A. MENZIESII Lindl in Penny Cyclop 1:32. Loud Arbor 4:231 f. Nutt Sylva t 116. Newberry, Pac Ry R 6:56 t 9. = *Picea Sitchensis* fide B 2:122.

A. MERTENSIANA Lindl & Gord in J Hort se 5:211 (1850). = *Tsuga Mertensiana* fide B 2:121.

A. NOBILIS Lindl in Penny Cyclop 1:30. B 2:119.

A. PARSONIANA Hort ex Mast, Gard Chron 1880, i, 648. = *A. Lowiana* fide B 2:118.

A. PATTONII Jeff, ex Gord, Pin Sup = *A. Pattoniana* fide B 2:121.

A. PATTONIANA Jeffrey, ex A Murray, bot exp Oregon circ = *Tsuga Pattoniana* fide B 2:121. = T. Hookeriana fide IK.

A. SITCHENSIS Bong. Veg Sitch 46. = *Picea sitchensis* fide B 2:123.

A. SUBALPINA E ex Ward, Am nat 10:555 (1876). = *A. lasiocarpa* fide IK. Henderson, Z 2:279.

A. WILLIAMSONII Bridges ex Gord Pin Suppl 12. = *Tsuga Mertensiana* fide IK.

A. WILLIAMSONII Newberry, Pac Ry R 6:53 t 7. = *Tsuga Hookeriana* fide IK. = T. Pattoniana fide B 2:121.

ABILDGAARDIA Vahl Enum 2:296 (1806). = *Fimbristylis* Vahl fide IK.

A. FUSCA = *Fimbristylis* Vahl fide IK. B 2:223 cites *Gussonia cyperoides* Presl, Rel Haenk 1:183 t 33, described as from Monterey, Cal., as a synonym of this Asiatic plant ("probably not collected in Cal.?).

ABRONIA Juss Gen 448 (1789). B 2:3. A 1:278 d.

A. AMMOPHILA P 4:226.

A. ANGUSTIFOLIA P 3:344.

A. ARENARIA Menz ex Hook, Exotic Fl t 193. Wat bot King 476. B 2:4, as *A. latifolia* Esch.

A. CAEREA P 3:343.

A. CRUX-MALTAE K 2:71 f 16. Wat, Am ac pr 12:253. B 2:5. Curran, Cal ac b 1:146, Northwestern Nevada.

A. CYCLOPTERA Wat bot King 285, in part=A. Crux-Maltae fide B 2:5.

A. FRAGRANS Nutt ex Hook Kew J 5: 261 (1853). B 2:5, "Columbia river (Nutt) to Ut and NM, and eastward, not found in Cal."

A. GRACILIS Benth, bot Sulph 44, Baja. B 2:4.

A. LATIFOLIA Esch, Mem ac Petersb 10:281. B 2:4. Par 150 t.

Washington to San Diego mts.
A. MARITIMA Nutt ex Wat, B 2:4. Par 296. A 1:278 d. Da 14. P 1:92, Mig. Ab 137. Greene, Cal ac b 2:411, Cruz.

A. MELLIPERA Dougl, Hook, bot mag t 2879. B 2:4, "Wash, Ore, at a distance from the coast."

A. MICRANTHA P 3:343.

A. POGONANTHA. Z 1:62.

A. TURBINATA T, ex Wat, bot King 285 t 31. B 2:5. A 1:279 d. Z 2:370.

A. UMBELLATA Lam III 1:569 t 105. Par 296. B 2:4. P 1:92. Mig. 1:289, Baja. A 1:279 d. Da 14. Greene, Cal ac b 2:411, Cruz. Br 1:216, Rosa. Ab 137.

Columbia river to Baja Cal.
A. VILLOSA Wat Am nat 7:302 (1873), B. 2:4. Par 294. Da 14. A 1:86 fdr.

Type locality: "NM; Ar; So Cal; Nev." Colorado Desert (Parish).

ABUTILON Tourn, ex Adans, Fam 2:398 (1763). B 1:87.

Bractlets 0; sds or ovules 3-9 in each cell; otherwise as Sida. Herbs or shrubs, com soft-tomentose; fls mostly axy, oft y. About 70 sp.

A. AURANTIACUM Wat, Am ac pr 20: 357 (21 F 1885). A 1:69 fdr.

A. CRISPUM Sweet, Hort Brit ed 1, 53. A 1:69 d B 1:87.

A. LEMMONI Wat, Am ac pr 20:357 (21 F 1885). A 1:69 fdr.

A. NEWBERRYI Wat, Am ac pr 11:125 (1876). B 1:87. See Horsfordia Newberryi G.

A. PALMERI G, 8:289. B 1:87.

Shrubby below, tall: sts and stalks pubescent and com villous; lvs velvety tomentose, round-cordate, dentate, 4-6' lg; fls mainly in a naked panicle; peduncles or pedicels about 1' lg; cx very villous, in fr ½' lg, the lobes triangular-ovate, acuminate, little shorter than petals: carpels about 8, with sh subulate beaks, very villous: sd-coat warty. Yaqui river, Son. Ar. (CHN 1:67, Baja, G says is "probably distinct.")

A. CALIFORNICUM. Z 2:146.

ACACIA L, Fl Zeyl 217 (1737). Willd, Sp Pl 4:1049 (1805). B 1:163. A 1:377 d.
A. FARNESIANA Willd, Sp Pl 4:1083. B 1:164.

A sm spreading tree, with straight slender stipular spines, pubescent or glab: pinnae 4 or 5 pairs; lfts 10-25 pairs, linear, 1-2" lg, crowded; hds globose: pod oblong, cylindrical, at length turgid and pulpy, 2-3' lg, 6-9" thick, longitudinally veined. Widely distributed in tropical and subtropical regions. About the Cal missions, where it was probably planted by the padres because of the tradition that the crown of

thorns of sacred history was made from its branches. Oft cult for the perfume of its fls.

A. GREGGII G, Pl Wright 1:65. B 1:164. A 1:377 d.

A. WRIGHTII Benth, Ex G, Pl Wright 1:64 Tex. B 1:164.

ACAENA L, Mant 2:145 (1771).

A. PINNATIFIDA H & A bot Beech 339 (not Ruiz & Pavon). T & G Fl 1:430. T, bot Mex bound t 19.=A. trifida fide B 1:186.

A. TRIFIDA Ruiz & Pavon, Fl Peruv 1:67 t 104. B 1:186. Z 2:3, 349.

ACALYPHA L. Coroll Gen 19 (1737).

Shrubs or undershrubs, or oft per or ann herbs, lvs alt, toothed, 2-stipulate; pet 0; cx 4 (or 3-5) parted, stm fls in axy ament-like spikes; first fls clustered: all bracteate: stig finely dissected. Over 200 sp, mostly tropical.

A. CALIFORNICA Benth, bot sulph 51. B 2:70.

Shrub, with spreading rigid branches and brownish bark, puberulent on the young twigs; lvs ovate, somewhat cordate, acute, finely toothed, 3-5-nerved at base. Magdalena bay, Baja (Hinds). SD!

ACANTHOMINTHA G, Syn Fl 2:365 (1878). A 1:364.

A. ILICIFOLIA G, Syn Fl 2:365. B 2: 477. A 1:364 d.

A. LANCEOLATA Curran, Cal ac b 1: 13 (1884).

ACANTHOCTYPHUS Small. A 1:279 d.
A. PARISHII A 1:279. Ab 115.

Based on Oxythea Parishii Parry, which see for description.

Abrams, Fl LA 115—"Common in the pine belt of the Gabriel and Sber mts."

ACANTHONYCHIA Rohrb, in Mart Fl Bras 14:II, 249 t 56 (1872)=Pentacae-na Barth fide IK.

A. POLYCNEMOIDES Rohrb, in Mart Fl Bras 14:II, 250.=P. polycnemoides fide IK.

A. RAMOSISSIMA Rohrb, in Mart Fl Bras 14:249 t 56. B 1:72 as P ramosissima H. & A.=P. polycnemoides fide IK.

ACARPHAEA Harv & Gray, ex G, in Mem Am ac 4:I, 98 (1849)=Chaenactis fide IK.

A. ARTEMISIAEFOLIA Harv & Gray, ex G, Mem Am ac 4:I 98. T, bot Mex bound 95 t 32. B 1:391 as C. artemisiaefolia.

ACAUTION Muell. (Musc.)

A. MUTICUM Muell; "Sulliv & Lesq Musc Am Bor Exsicc 2 ed n 32." B 2: 358 as Sphaerangium muticum Schimp.

ACER (Tourn) L, Syst ed 1 (1735).

A. CALIFORNICUM D. Dietr, Syn 2: 1283=Negundo aceroides fide IK.

A. CALIFORNICUM T & G, Fl 1:250.

A. CIRCINNATUM Pursh, Fl 1:267. B 1:107. Z 2:257. P 3:75; 5:3.

Corymbs 10-20-fl'd; sepals red or p'ish.

A. DIFFUSUM P 5:2.

A. DOUGLASHI Hook, Lond J bot 6:77 t 6 (1846). B 1:108 as A. glabrum. P 5:1, 2.

A. GLABRUM T in Ann N Y Lyc 2:173 (1828). T & G Fl 1:247. Wat, bot king 52. B 1:107. Z 2:156. P 5:1, 2, 3.

Sepals and petals greenish-y: filaments naked.

A. MACOUNII P 5:3.

A. MACROPHYLLUM Pursh, Fl 1:267. Hook, Fl 1:112 t 38. Nutt, Sylva 2:77 t 67. Newberry, Pacific Ry R 6:21. B 1:107, 2: 439. Z 2:156, 257. Da 5. Greene, Cal ac b 2:393, Cruz. Ab 240.

A. MODOCENSE P 5:4.

A. NEOMEXICANUM P 5:3.

ACER PLATANOIDES L.

ACER PSEUDO-PLATANUS L.

A. SUBSERRATUM P 5:1.

A. TORREYI P 5:2.

A. TRIPARTITUM Nutt, ex T & G, Fl 1:248; Sylva 2:85 t 71. B 1:108 as A. glabrum. P 5:1.

ACERATES Ell sketch 1:316 (1817). = Gomphocarpus R. Br fide IK.

A. ATROPURPUREA K 1:65 (1854-1859): reprint 69. B 1:477 as G. cordifolius (also Curran, Cal ac b 1:142).

A. CORDIFOLIA Benth, Pl Hartw 323. B 1:477 as G. cordifolius.

A. LATIFOLIA T, in Fremont r 317. B 1:476 as Asclepias cryptoceras.

A. TOMENTOSA T, in bot Mex bound 160 t 44. B 1:477 as G. tomentosus.

ACHILLEA L, Syst ed 1 (1735).

Per herbs, with finely dissected lvs, and sm hds of both tubular and ligulate fls corymbose at the ends of the st and branches: inv ovoid or campanulate, its bracts compressed, imbricated in few sr: receptacle flat or convex, chaffy; chaff membranous, subtending the disk-fls: ray-fls w or pink, pistillate: disk-fls perfect, fertile, y: ak oblong or obovate, slightly compressed: pappus o. Yarrow, Milfoil.

A. ABENICOLA M 1:61.

A. LANATA Pursh. B 1:381 as Bahia lanata.

A. LANULOSA Ab 435.

Pubescent or nearly glabrous, simple or corymbosely branched above, 3-6 dm hi; basal lvs and those of the sterile shoots petioled, those of the st sessile, all narrowly oblong or lanceolate in outline, finely dissected into narrow pinnatifid seg; hds num, 4-6 mm broad, in terminal compound dense corymbs; rays 4-6 w.

A. MILLEFOLIUM L, Sp Pl 899. B 1:400. Da 10. Greene, Cal ac b 2:404, Cruz. Br. 1:213, Rosa Par 98. P 1:90 Mig.

ACHLYS D C, Syst 2:35 (1821).

A. TRIPHYLLA DC Syst 2:35. B 1:16. Z 2:266.

ACHOMANES Necker. P 4:104.

A. MEMBRANACEUM P 4:104 as Trichomanes m.

ACHYRACHAENA Schauer, Del Sem Hort Vratisl 1837, 3, ex Linnae 12 (1838) Litt 87. A 1:247 d.

A. MOLLIS Schauer; DC, Prodr 5:292. B 1:371 d. Da 9. A 1:247 d. Greene, Cal ac b 2:403, Cruz. Ab 425.

Throughout California; Baja! Cruz.

ACHYRANTHES L, Gen ed 1, 34 (1737).

A. LANUGINOSA Nutt, Fl Ark 166. B 2:43 as Cladothrix lanuginosa.

ACHYROMYCHIA T & G, Am ac pr 7:330 (1868).

A. COOPERI G 7:331. B 1:73. Z 1:231. **A. RIXFORDII** T. S. Brandegee, Z 1:230. Type locality Owen's valley, Inyo Co, Cal (Mr. G. P. Rixford).

ACONITUM Tourn ex L, Syst ed 1 (1735).

A. COLUMBIANUM Nutt, T & G Fl 1:34. B 2:428. Z 2:161. B 1:12 as A. Fischeri. Par 334 t.

A. FISCHERI Reichb, Mon Acon t 22. B 1:12; 2:428, Cal plant as A. Columbianum. Siberia.

A. NAPELLUS Par 334.

A. NASUTAM Hook, Fl Bor Am 1:26.

B 1:12 as A. Fischeri. = A. columbianum.

ACOUTIA D. Don, in L Soc tr 16:203 (1830). = Perezia Lag fide IK.

A. MICROCEPHALA DC Prodr 7:66. B 1:422 as P. microcephala.

ACROLASIA Rydberg.

A. PARVIFLOEA M 1:138, based on Mentzelia parviflora Heller, Torr cl b 25:199 (1898).

ACTAEA Tourn, L, Syst ed 1 (1735). A 1:257 d.

A. ARGUTA Nutt, T & G Fl 1:35. P 3:84. B 1:12 as var. of A. spicata.

A. SPICATA L, Sp Pl 504. B 1:12. A 1:257 d.

Variety **ARGUTA** B 1:12. A 1:257 d.

Fr w or r, in a loose more elongated raceme. Japan; Alk; SF; Eu; Sib; BC; NM.

ACTINELLA Nutt, Gen Am 2:173 (1818). P 3:265 as Tetraneuris Greene.

A. ACAULIS Nutt, Gen Am 2:173. P 3:265 as T. a.

A. ARGENTEA G, Mem Am ac 4:100 (1849). P 3:269 as T. a.

A. BIENNIS G, 13:373 (1878). P 3:272 in part as Pteradenia b.

A. BRANDEGEEI T. C. Porter, ex G 13:373 (1878). P 3:270 as Rydbergia glabrata.

A. COOPERI G 7:359 (1868). P 3:272 as Pteradenia C. B 1:394.

A. DEPRESSA Harv & Gray, ex G, mem Am ac 4:100 (1849). P 3:266 as T. d.

A. GLABRA Nutt in Am phil soc tr, n s, 7:379 (1841). P 3:268 as T. g.

A. GLABRA A. Nelson, Fl Wyo 137. P 3:265 as T. Torrejana.

A. GRANDIFLORA T & G Bost J nat hist 5:110 (1847). P 3:270 as Rydbergia g.

Variety **GLABRATA** Porter & Coulter, Fl Colo 76 (1874). P 3:270 as Rydbergia glabrata.

A. LANATA Nutt, Am phil soc tr, n s, 7:379 (1841). P 3:265 as T. l.

A. LEPTOCLODA G, Pacific Ry R 4:107. P 3:269 as T. l.

A. LINEARIFOLIA T & G, Fl 2:383. = T. l of P 3:269.

A. ODOREATA G, Mem Am ac 4:101 (1849). P 3:273 as Pteradenia o.

A. RICHARDSONII Nutt, Am phil soc tr, n s, 7:379 (1841). B 1:394. P 3:271 as Pteradenia R. B 1:384.

Variety **BIENNIS**.

A. RUSBYI G 19:33 (1883). P 3:271 as Pteradenia R.

A. SCAPOSA Nutt, Am phil soc tr, n s, 7:379 (1841). P 3:266 as T. s.

Variety **LINEARIS** Nutt, Am phil soc tr, n s, 7:379. P 3:267 as T. l.

A. TEKANA Rose, bot gaz 16:27 (1891). P 3:273 as *Picradenia* T.
A. TORREYANA Nutt, Am phil soc tr, n s, 7:379 (1841). P 3:265 as T. T.
A. VASEYI G, 17:219 (1881-2). P 3:271 as *Picradenia* V.

ACTINOLEPIS DC Prodr 5:655 (1836). G, syn Fl 1, pt 2, 328 as *Eriophyllum* Lag.

A. ANTHEMOIDES G, in B 1:378 fd. G, Syn Fl 1, pt 2, 328 as *Baeria* a.

A. CORONARIA G 9:197 (1874). B 1:378; 2:457. G, Syn Fl 1, pt 2, 327 as *Baeria coronaria*.

A. LANOSA G 9:197. B 1:379. G, Syn Fl 1, pt 2, 329 as *E. lanosum*.

A. LEMMONI G 16:101 (1881). G, 19:20 as *Syntrichopappus* L.

A. MULTICAULIS DC Prodr 5:656. B 1:378. Da 9. Hook, Ic t 325. T, bot Mex bound t 33. G, Syn Fl 1, pt 2, 328 as *E. multicaule*.

A. MUTICA G 9:197 (1874). B 1:378; 2:457. G, Syn Fl 1, pt 2, 328 as *Baeria* m.

A. NIVEA G 9:197. G, Syn Fl 1, pt 2, 323 as *Eatonella nivea*. B 1:379.

A. TENELLA G 9:197. Da 9. B 1:378. G, Syn Fl 1, pt 2, 327 as *Baeria tenella*.
A. WALLACEI G, 9:197. Da 9. B 1:379. G, Syn Fl 1, pt 2, 329 as *E. Wallacei*. B 1:379. Ab 431.

ACTINOMERIS Nutt, Gen Am 2:181 (1818).

A. NUDICAULIS Nutt, Am phil soc tr, II, 7: 364 (1841). M 1:8 as *Verbesina aristata*. V (not Cal). G, Syn Fl 1, pt 2, 288 as V n.

ADENOCAULON Hook, bot misc 1:19 t 15 (1830).

A. BICOLOR Hook, bot misc 1:19 t 15. B 1:335.

ADENOSTEGIA Benth, in Lindl Syst nat ed 2, 445 (1836). = *Cordylanthus Nutt* fide IK.

An, with all narrow entire or 3-5-parted lvs, and irreg fls scattered along the com, many branches or in terminal clusters or hds; bracts and cx never colored; cx spathe-like, consisting of an anterior and a posterior lf-like division or the anterior division 0; cor tubular, somewhat enlarged above; its lips about equal in length, the lower obtusely 3-toothed; sta 4 or 2, anther-cells unequal, ciliate or minutely bearded; cap flattened sds with a loose coat, pointed at one end.

A. FILIFOLIA Ab 372, based on *Cordylanthus filifolius* Nutt. = *A. rigida* Benth.

Sts erect, branched, 3-6 dm hi; lvs all filiform, 3-parted to near the base; herbage pubescent with short reflexed hairs intermingled with scattered spreading hispid hairs; hds several-fld, terminating branches; bracts 3-lobed to near the base, the entire portion about 1 mm broad, strongly 3-nerved; lobes all filiform and usually nearly equal, the outer surface very hispid with stout spreading hairs rising from postulate bases, inner surface concave, pubescent, slightly elongated at the apex and tipped with a blackish, more or less retuse gland; cor p'ish, 12-15 mm long. SD Co S F; Mariposa Co; Baja!

A. MARITIMA P 2:181 based on *Cordylanthus maritimus*. A 1:232 d. Ab 372. Z 2:368.

A span or two hi, corymbosely branched, cinerous-pubescent; lvs glabrate, slightly fleshy; pairs of fl very unequal. Sandy salt marshes, SD to SF; Sber Co; Humboldt Co.

A. NEVINII P 2:181 (1891), based on *Cordylanthus Nevinii* G 17:229 (1882). Hall 114.

Anomalous in the division by its essentially 1-celled anthers: loosely much branched, villous-pubescent; lvs either 3-parted or entire, narrowly linear, not callose-apiculate; fls scattered along the slender branchlets, nearly naked, much exceeding the subtending floral lvs; cor y'ish and p'ish; 4 sta alike, with villous fil, sometimes a rudimentary second cell to the anth but com 0; sds smooth, scarious-apiculate. Sber mts (Nevin, Parish); SD Co!

A. ORCUTTIANA P 2:181 based on *Cordylanthus Orcuttianus* G 19:95 (1833).

A. RIGIDA Benth, in Lindl Syst nat ed 2, 445 (1836). P 2:180. Hall 114. B 1:581 as *Cordylanthus filifolius*. Z 1:2.
ADENOSTOMA H & A, bot Beech Voy 139, et 338 t 30 (1832). A 1:315 d. B 1:184.

A. BREVIFOLIUM Nutt, ex T & G Fl 1:430. B 1:184 as *A. fasciculatum*.

A. FASCICULATUM H & A, bot Beech Voy 139, 338 t 30. B 1:184. Da 5. Z 2:119. Greene, Cal ac b 2:397, Cruz. Br 1:209. Rosa. Par 69. A 1:316 d. Ab 202. Rec 140; bot Mex Bound 63 t 20. B Co, Baja!

Foliage dark green, subulate, acute; bark gray.

A. SPÆSIFOLIUM T in Emory, mil Rec 140; bot Mex Bound 63 t 20. B 1:185. A 1:316 d. Par 70. Ha 85. SD Co! Baja mts! Bastard cedar. Yerba del Pismo. Deer brush.

Foliage pale green, obtuse, scattered; bark reddish.
ADENOSTYLES Cass in Dict Sc Nat 1, Suppl 59 (1816).

A. NARDOSMIA G 8:631 (1873). B 1:301 2:453. G, Syn Fl 1; pt 1, 376 as *A. Cacalopsis* *Nardosmia*.

Genus ADIANTUM Linnaeus.

A. ÆTHIOPICUM, Baker, Syn Fil 123. B 2:342, in part as *A. emarginatum*.

A. AMERICANUM Carnatus, Can Pl Hist 7 t 6. B 2:343 as *A. pedatum*.

A. CAPILLIS-VENERIS L, Sp Pl 1096. Da 20. B 2:342 d. Greene, Cal ac b 2:415, Cruz. P. 1:208. Cedros.

Venus-hair or black maidenhair fern. United States. Mexico.

A. CHILENSE Kaulfuss. Of American authors = *A. emarginatum* fide. B 2:342.

A. CONCINNUM. Z 2:151.

A. DILATATUM Nutt, in Hook hb. B 2:342. Identity doubtful.

A. EMARGINATUM Hook, Sp Fil 2 t 75. Da 20. B 2:342, 485. Z 2:131, 382. Br 1:205. Cruz; 218 Rosa.

A. JORDANI Muell, in bot zeit 22:25 t 1 f 1. B 2:485 as *A. emarginatum*. California; Nevada; N. M.; Oregon.

A. FEDATUM L, Sp Pl 1095. B 2:342. Z 1:148; 2:131. Greene, Cal ac b 2:415, Cruz.

Alaska to southern Cal. Maidenhair.

ADOLPHIA Meissn, Gen 70 (50) (1837).

Sm-leaved or nearly leafless shrubs, with opp divaricate g branches articulated with the st and ending in spines, and sm fls in sparse axyl clusters.

A. CALIFORNICA Wat, Am ac pr 11: 126 (1876). B 1:101.

"In large dense clumps 2' hi: branches terete, with spreading spiny branchlets, puberulent: lvs orbicular to oblong-ovate, often retuse, 1" or 2 long, abruptly attenuate to a slender petiole: fls gl'sh, 2" broad, or pedicels as long as the lvs: pet rather broadly hooded: fr 2" in diam; the short sty jointed at the very base." B 1:101. Adolphia infesta Torrey, Bot Mex Bound 45, in part. San Diego County! Baja California.

A. INFESTA Meissn, Gen 70 (50). B 1:101.

Resembling A. Californica: 3-4 ft hi: lvs linear to oblong-lanceolate, mucronate, attenuate to a short petiole, 2-6 li long: pet narrowly hooded: sty 1 li long, jointed above the base and leaving the cap apiculate. Mex; NM; Ar.

AECIDIUM.

AE. RIVINAE M 1:20.

AE. WEDELIAE M 1:16.

AECILOPS L, Coroll Gen 20 (1737). = *Triticum* L, fide IK.

AE. EYSTEIX Nutt, Gen Am 1:86. B 2:327 as *Elymus* Sitanon.

AEGOCHLOA Benth in bot reg sub t 1622 (1833). = *Gilia* fide IK.

AE. ATRACTYLOIDES Benth, bot reg t 1622. P 1:138 as *Navarretia* a.

AE. COTULAEFOLIA Benth, bot reg t 1622. P 1:132 as *Navarretia* c.

AE. INTERTEXTA Benth, bot reg t 1622. P 1:131 as *Navarretia* i.

AE. PUBESCENS Benth, bot reg t 1622. P 1:133 as *Navarretia* p.

AE. FUNGENS Benth, bot reg t 1622. P 1:133 as *Navarretia* p.

AE. ERYNGIODES Benth bot reg t 1622. = *Gilia* *Navarretia* fide IK.

AE. TORREYI G. Don, Syst 4:246. = *Gillapungens* fide IK.

AEGOPOGON Geauv Agrost 122 in part.

AE. CENCHROIDES Humb & Bonpl ex Willd Sp Pl 4:899. B 2:266.

AESCULUS L, Syst ed 2, 22 (1740).

AE. CALIFORNICA Nutt, T & G Fl 1: 251. B 1:106. Z 1:87. Par 71.

AE. HIPPOCASTANUM L, Sp Pl 344. B 1:106.

AE. PARRYI G 17:200 (1881-2).

AGAEDHRELLA (ALGAE).

A. COULTERI W 10:160.

AGARISTA DC, Prodr 5:569 (1836), not D. Don. = *Coreopsis* L fide IK.

A. CALLIOPSIDEA DC Prodr 5:569. B 1:355 as *Pugliopappus calliopsides*.

AENOTHEA nitida P 1:70 fd. Mig.

AGASTACHE.

A. CUSICKII M 1:59 based on *Lophanthus Cusickii* Greenm, Er 7:119 (1899).

A. GLAUCIFOLIA M 1:32.

A. SCROPHULARIAEFOLIUS **MOLLIS** M 1:4 based on *Lophanthus scrophulariaefolius* var. *mollis* Fernald, Rhodora 1:220 (1899).

A. OCCIDENTALIS M 1:4 based on *Vleckia occidentalis* Piper, Er 6:31 (1898).

ABESINA. P 4:104.

ABEMA. P 4:103.

AGAVE L, Hort Ups 87 (1748).

A. AMERICANA A 1:329 d. Mex. Greene, Er 1:52. Parish, Er 1:45, morphological note.

Variety **MACULATA**. A 1:329 d.

Variety **MILLERI**. A 1:329 d.

Variety **STRATA**. A 1:329 d.

Variety **VARIEGATA**. A 1:329 d.

A. CALIFORNICA Jacobi Nachtr 47 = *A. falcata* fide IK.

AGAVE DECIPiens Baker.

A. DESERTI E, St Louis ac tr 3:310 (1875). B 2:142. CD! Baja!

A. MARGARITAE Z 2:12.

A. NEWBERGII E, St Louis ac tr 3: 309 (1875). B 2:142.

A. PARVIFLORA T, bot Mex bound 214. B 2:142. Mexico.

A. PALMERI E, St Louis ac tr 3:319. Ar.

A. PARRYI E, St Louis ac tr 3:311. Ar.

A. PRINGLEI E. = *A. deserti*.

A. SEBASTIANA Greene, Cal ac b 1:214. P 1:198, 208 Cedros.

A. SCHOTTII E, St Louis ac tr 3:305. B 2:142.

A. SHAWII E, St Louis ac tr 3:314 t 2-4. B 2:142. Quintin! Calmalli! Pt Loma, SD!

Twenty feet high with very compact, dark olive-green leaves, margined with stout spines. Peculiar to the coast region of Southern and Lower California.

A. UTAHENSIS E, bot King Exp 497. Ut. Ar. B 2:484.

AGERATUM L, Gen ed 1, 247 (1737).

A. LINEARE Cav, Ic 3:3 t 205. B 1:388 as *Palafoxia linearis*.

AGOSERIS Rafin, Fl Ludov 58 (1817). = *Troximon* fide IK.

A. DASYCARPA P 3:26 fd.

A. GLAUCA P 4:37.

A. LEPTOCARPA M 1:143 fd.

A. MONTICOLA P 4:37 fd.

A. FLEBEIA. Ab 450.

A. BEIBORSA P 3:27. Ab 451.

AGRIMONIA Tourn ex L, Syst ed 1 (1735).

A. EUPATORIA L, Sp Pl 448. Er 1:13. B 1:185.

AIRA L, Fl Lapp 27 (1737).

A. ARCTICA Spreng, Syst Cur Post 32. = *Deschampsia caespitosa* fide IK.

A. ARCTICA Trin, "St Pet ac mem 1831, 56." B 2:237 as *A. caespitosa*.

A. BOTTNICA Wahlenb, Fl Lapp 36 t 4. B 2:297 as *A. caespitosa*. Trin, Ic t 255.

A. CAESPITOSA L, sp Pl 64. B 2:297. = *Deschampsia caespitosa* fide IK.

A. DANTEONIOIDES Trin, Pet ac mem vi, 1:57 (1830). B 2:298. = *Deschampsia calycina* fide IK.

A. ELONGATA Hook, Fl Bor Am 2:243. B 2:297. = *Deschampsia* e. fide IK.

A. LATIFOLIA Hook, Fl Bor Am 2:243. B 2:298. = *Deschampsia* l, fide IK.

A. OBTUSATA Michx Fl Bor Am 1:62. B 2:302 as *Eatonia* o.

A. TRUNCATA Muhl Desc Gram 83. B 2:302 as *Eatonia obtusata*.

ALARCONIA DC, Prodr 5:537 (1836). = *Wyethia* fide IK.

A. ANGUSTIFOLIA DC. = *W. a.* fide IK.

- A. HELENIODES** DC. B 1:349.=**W.**
Robusta fide IK.
ALBIZZIA PROCERA Benth.
ALCHEMILLA L, Syst ed 1 (1735).
A. ARVENSIS Scop Fl Carn ed 2, 1:115.
Da 5. B 1:185; 2:444. Z 1:9. Ab 203.
SD (Or 450): Ore; Id; Cruz; Guad.
Parish Zoe 1:9, "evidently indigenous."
Alchemilla cuneifolia Nuttall, in T & G Fl 1:432.
Alchemilla occidentalis Nuttall, in T & G Fl 1:432.
A. CUNEIFOLIA Nutt, T & G Fl 1:432.
B 1:185 as A. arvensis.
A. OCCIDENTALIS Nutt, T & G Fl 1:432. B 1:185 as A. arvensis.
ALDENELLA. P 4:212 fd.
A. TENUIFOLIA P 4:212, based on Polanisia t, T & G, Fl 1:123 (Cleome t, Le Conte).
ALGABOBIA Benth, Pl Hartw 13 (1839).=Prosopis L, fide IK.
A. GLANDULOSA T & G Fl 1:399. B 1:163 as P. juliflora.
A. DULCIS Benth.=P. juliflora.
A. JULIFLORA Heynh Nom 2:18.=P. juliflora.
ALIGERA Suksdorf. Er 6:23.
"Fr winged, its lateral faces equal, narrower than the ventral one; wings equally incurved above and below, forming with the ventral face a dish or vessel, orbicular or oval in outline, and saucer-bowl-cup- or urn-shaped, or oft resembling a breathing-pore or stoma with its cavity, the incurved part of the wings in the latter case imitating guardian cells. Cotyledons parallel to the ventral face, plainly reticulated when expanded." Suksdorf, Erythraea 6:23.
A. CILOSA Skdf Er 6:23; "Disk oval or roundish, stoma shaped, its opening elliptic-rhombic or roundish and larger. Cal."
A. INSGNIS Skdf, Er 6:24, Baja; "Disk orbicular, stoma shaped, its aperture roundish."
A. MACROCERA Skdf, Er 6:23, based on Valerianella macrocera G: "Disk cup-shaped, orbicular, shorter than the fr. Cal."
ALIGERA PATELLIFORMIS W. Suks.
ALISMA (Dill) L, Syst ed 1 (1735).
A. PLANTAGO L, Sp Pl 342. B 2:200.
Variety **AQUATICA** Er 1:13.
A. BREVIPES P 4:158.
A. VALIDUM P 3:115.
A. CALIFORNICUM Micheli, in A. DC Mon Pham 3:34.
A. CALIFORNICA Boland Cat 29. B 2:200 as Damasonium Californicum.
ALLIONIA Laef, Iter 181 (1758).
"Inv ex-like, 3-parted, herbaceous, scarcely changed in fr, 3-fld: perianth funnelform, with an oblique 4-5-lobed limb: sta 3-5, included, nearly distinct: stig capitate: fr ovate, compressed, smooth and convex on inner side, the back with a rigid inflexed toothed margin enclosing a double line of stipitate tubercles: embryo plicate, the inner cotyledon shorter. Ann or per herbs, with opp very unequal lvs, and axyl pedunculate fls. Probably only a single very variable species, common to North and South America." B 2:3.
- A. INCARNATA** L, Syst ed 10, 890. B 2:3.
Colorado Desert (Parish 709, Orcutt).
A. LINEARIS Pursh Fl Am Sept 2:728. M 1:139.=Oxybaphus angustifolius fide IK.
A. MELACHROIDES Benth, bot Voy Sulph 44. B 2:3 as A. incarnata.
A. MONTANENSIS Osterhout, M 1:139 fd.
ALLIUM (Tourn) L, Syst ed 1 (1735).
A. ACUMINATUM Hook Fl Bor Am 2:184 t 196. B 2:148.
A. ACUMINATUM T, Pacific Ry R 4:148. B 2:149 as A. serratum.
A. AMPLECTENS T, Pacific Ry R 4:148. B 2:149 as A. attenuifolium K.
A. ANCEPS K 2:109 t 32 (1863). B 2:151.
A. ANCEPS Baker, bot mag t 6227. B 2:151 as A. platycaule Wat.
A. ASCALONICUM L, Amoen ac 4:454. B 2:146. "Schallott."
A. ATROBUEENS Wat, bot King Exp 352. B: 150.
A. ATTENUIFOLIUM K 2:110 f 34. B 2:149.
A. BISCEPTRUM Wat bot King 351, 487 t 37 1-3. B 2:149.
A. BIDWELLIAE Wat, Am ac pr 14:231 (1871). B 2:150.
A. BOLANDERI Wat, Am ac pr 14:229 (1879). B 2:148.
A. BREWERI Wat, Am ac pr 14:233 (1879). B 2:151.
A. CAMPANULATUM Wat, Am ac pr 14:231 (1879). B 2:149.
A. CEPA L, Sp Pl ed 1, 300. Persia. Onion. B 2:146.
ALLIUM CRISPUM Greene.
A. CROCEUM T, bot Mex bound 218. B 2:152 as Bloomeria aurea.
ALLIUM DICHLAMYDEUM Greene.
A. DOUGLASSII Hook, Fl Bor Am 2:184 t 197. B 2:147.
A. DOUGLASSII Wood, Phila ac pr 1868, 170. B 2:149 (in part) as A. bisceptrum.=A. unifolium in part fide IK.
A. ELWESI Regel, Act Hort Petr 5:266 (1877). B 2:148 as A. acuminatum?
A. FALCIPOLIUM H & A, bot Beech 400.
A. FALCIPOLIUM T, Pac Ry R 4:148 in part =A. unifolium fide B 2:147, in part=A. serratum and A. bisceptrum (B 2:149).
A. FIMBRIATUM Wat, Am ac pr 14:232 (1879). B 2:150.
A. HAEMATOCITON Wat, Am ac pr 14:227 (1879). B 2:148. Da 17. Ab 84.
A. LACTEUM Benth, Pl Hartw 339. B 2:156 as Brodiaea lactea.
A. LACUNOSUM Wat, Am ac pr 14:231 (1879). B 2:149.
A. LEMMONI Wat, Am ac pr 14:234 (1879). B 2:151.
A. MARITIMUM Benth, Pl Hartw 339. T, bot Mex bound 217. Regel, Al mon 219. B 2:152 as Muilla maritima.
A. MURRAYANUM Regel, Gartenfl 1873, 260 t 770 f 1. B 2:148 as A. acuminatum.
A. NEVADENSE Wat, Bot King 351, 487 t 38 f 1-3. B 2:150.
A. OCCIDENTALE G 7:390 (1863). B 2:149 as A. attenuifolium.
A. PALMERI Wat, bot 40th Par 487 t 27 f 10, 11, Z 1:245.

- A. PARISHII** Wat, Am ac pr 17:380.
A. PARRYI Wat, Am ac pr 14:231. B 2:150.
A. PARVUM K 3:54 f 13 (1863). B 2:150.
ALLIUM PENINSULARE Lemmon. Greene, Pittonia 1:165 (15 Je 1888).
A. PLATYCAULE Wat, Am ac pr 14:234. B 2:151.
A. POERUM L, Sp Pl 295. Eu. Leek. B 2:146.
A. RETICULATUM Benth, Pl Hartw 339. B 2:149 as *A. attenuifolium*.
A. SANBORNII Wood, Phila ac pr 1868:171. B 2:148.
A. SATIVUM L, Sp Pl 296. Eu. Garlic, B 2:146.
A. SCHAENOPRASUM L, Sp Pl 301. B 2:146. "Chives."
A. SERRATUM Wat, bot King 487 t 37 f 4-5. B 2:149. Z 1:145. Ab 85.
A. TILINGI Regel in Act Hert Petsop 3, ii, 124 (1875). B 2:156.
A. TRIBRACTEATUM T, Pac Ry R 4:148. B 2:150.
 Variety **ANDERSONI** Wat, bot King 353. B 2:150 as *A. parvum*.
A. UNIFOLIUM K 2:112 f 35 (1863). B 2:147. Da 17.
A. VALIDUM Wat, bot King 350. B 2:147.

Genus **ALLOCARYA** Greene.

- A. AUSTINAE** Greene.
A. CALIFORNICA P 1:20 4:236. Cov 4:163.
 Myosotis Californica Fisch & Mey Ind Sem Petrop 2:42 (1835).
 Type locality: "In Nova California circaolniam Ross (icam)"
Eritrichium Californicum DC.
A. COGNATA P 4:235 Ut.
A. CHORISIANA Greene.
A. COOPERI Greene.
A. CUSICKII Greene.
A. DIFFUSA Greene.
A. echinoglochii P 1:15, based on *Echinosperrum* Greenel G 12:163. See *A. Greenel*.
A. GREENELI. Based on *Echinosperrum* G. Ore, Baja!
A. HENRERSONI Aven Nelson.
ALLOCARYA HICKMANII Greene.

"Very slender, diffuse, the filiform racemose branches 6-10' lg; ex 1" lg, the lower on lg'er, the upper on sh'er filiform pedicels: cor 1" or more broad: nutlets ovate, hardly $\frac{1}{2}$ " lg, dark colored, tuberculate but not rugulose, ventral face as in *A. lithocarya*, namely, the scar and all but the upper part of keel hidden within a completely closed grove."—P 1:13. Southern part of Monterey Co.

- A. BERTA** Greene.
A. HISPIDULA Greene.
ALLOCARYA HUMISTRATA Greene.

"Stout and succulent, branches com prostrate, 1' lg, racemose thruout: pedicels sh and stout, com deflexed: exlobes linear-spatulate, in fr greatly enlarged (4-6" lg) and turned to one side, standing vertically in a row; cor sm; nutlets ovate lanceolate, $\frac{3}{4}$ " lg, straight, carinate ventrally down to the nearly or quite basal, rounded scar, the back with very minute muriculations and sharp-

edge transverse regulae which com develop sh and minute penicillate bristles.—P 1:16. SD, thruout Cal. *Eritrichium Californicum* var. *subglochidiatum* G, B 1:266, excluding the plant of the Rocky mts.

- A. LEPTOCLADA** P 3:109 Nev.
A. LITHOCARYA Greene.
A. MOLLIS Greene.
A. MYRIANTHA Greene.
A. NELSONII Er 3:48. P 3:109.
A. NITENS P 3:108, Nev.
A. ORTHOCARPA P 4:235 Ut.
A. PENICILLATA Greene.
A. PLEBHA Greene.
A. SALSA Br.
A. SCOPULORUM P 4:236. Krynitzkia californica G.
A. SCUOLERI Greene.
A. SCRIPTA Greene.
A. STIPITATA P 3:109; 4:235.
A. STRICTA P 4:235.
A. TENERA P 3:109 Lake Co, Cal.
ALLOCARYA TRACHYCARPA Greene. Abrams, Fl LA 331.—"In low ground near Inglewood."
A. VESTITA Greene.
ALLOTROPA G, 7:368 (1868); Pacific Ry R 4:81 (1855).
A. VIRGATA T & G, Am ac pr 7:368. B 1:461; 2:461. Z 2:266.
ALNUS (Tourn.) L, Syst ed 2 (1735); Fl Lapp 260 (1737). P 1:558 d.
ALNUS CORDIFOLIA Tenore.
A. GLUTINOSA Medic, Pfl Anat 393. El. Asia.

Variety **SERRULATA** Regel, Mon 106, in part=*A. rhombifolia* fide B 2:80.
A. INCANA Medic Pfl Anat 393. P 3:70. Variety **GLAUCA** Regel, DC Prodr 16 (2) 188. B 2:81 as Var. *virescens*. Variety **VIRESCENS** Wat, B 2:81.
A. OBLONGIFOLIA T, bot Mex bound 204. NM. B 2:80, 483.=*A. rhombifolia* fide Parry, Cal ac b 1:354.
A. OREGANA Nutt, Stil 1:28 t 9. B 2:80 as *A. rubra* Bong.
A. RHOMBIFOLIA Nutt, Sylv 1:33. B 2:80. Z 2:236. Da 16. Ab 103. A 1:358 d Ha 71. Cov 195.
A. RUBRA Bong, Veg Stith 162. Regel, DC Prodr 16 (2):186. B 2:80, 483. Z 2:257. P 3:70.

A. SERRULATA Willd Sp Pl 4:336. Variety **RUGOSA** Regel, DC Prodr 16 (2):188. B 2:80 as in part *A. rhombifolia*; 81 as in part *A. incana* var. *virescens*. Variety **OBLONGIFOLIA** Regel, DC Prodr 16 (2); 188. B 2:81 as *A. oblongifolia*.

A. VIRIDIS DC, Fl Fr 3:304. Z 2:7, 159, 274.

- ALOE AFRICANA** Mill.
A. BREVIFOLIA Mill.
ALOE LATIFOLIA Haworth.
ALOE MITRIFORMIS Mill.
 Variety *xylonanacantha*.

Aloe picta.

ALOE VARIEGATA Linnaeus.
 Partridge-breast aloe. An African plant of great beauty, producing spikes of brilliant coral red flowers. It is found in many old-fashioned gardens and receives its common name from the feathery mottling of the leaves.

ALOYSIA Ort & Palav ex L'Herit Stirp 1:21 (1784).—Lippia L fide IK.

A. WEIGETHII Heller M 1:47 based on Lippia W, G Am J Sci, sr 2, 16:98 (1854).

ALSIA Sulliv. B 2:409.

A. ABETINA Sulliv. B 2:409.

A. CALIFORNICA Sulliv. B 2:409.

A. LONGIPES Sulliv & Lesq. B 2:409.

ALSINE Scop Fl Carn ed 2, 224 (1772).

=Arenaria fide IK.

ALSINE L. Al:265 as Stellaria.

A. MEDIA L, Sp Pl ed 1, 272. Ab 145.=
Spergularia media fide IK. Stellaria media Cyrill.

Weak and decumbent or ascending, 10-40 cm lg, glab except a line of hairs along the st and branches; lvs ovate or oval, 1-3 cm lg, the upper sessile, the lower petioled; fls 4-8 mm broad, in terminal leafy cymes or axys; pedicels slender; sep oblg, mostly acute, lg'er than the 2-parted pet; cap ovoid, lg'er than the ex; sds rough.

A. NITENS Greene. Ab 145. Stellaria nitens Nutt.

McClatchie, Erythra 2:79. Cat.

Very slender, erect an; sts filiform, several times forked, pubescent below; lvs mostly basal, the lowest ovate, acute, about 4 mm lg, on slender petioles of about the same length, the upper sessile, lance-linear, acute, 6-10 mm lg; sep very acute, scarious-margined, 1-3-nerved; pet $\frac{1}{2}$ as lg as the sep or 0; cap oblg, about equalling the sep.

A. PALUSTRE K 3:61 ls Arenaria palustris Wat fide Curran, Cal ac b 1:132. B 1:70. Z 2:3.

ALSINELLA Dill ex L Gen ed 1, 118 (1737).—Sagina fide IK.

A. CILIATA Greene, Fl Fr 126 (1891).

M 1:50 as Sagina ciliata.

ALTERNANTHERA Forsk, Fl AEgypt Arab 28 (1775). A 1:216 d.

A. ACHYRANTHA R Br Prodr 1:417. A 1:216 d. Ab 134. Da 15. Tropical Am.

A. LANUGINOSA T, in Emory R 150; bot Mex bound 180. B 2:43 as Cladotherix lanuginosa Nutt.

ALVOEDIA.

A. GLOMERATA Br 2:175, Purissima, Baja.

ALYSSUM L Syst ed 1, 1735. A 1:117 d.

A. CALYCIUM L, Sp Pl ed 2, 908. Eu, Asia. B 1:27. Pet w or y'ish; sep persistent: pods 4-seeded.

A. MARITIMUM Lam Encyc 1:98. Eu. A 1:117 d. B 1:27. Ab 180 as Konig maritima.

AMARANTHUS L, Syst ed 1 (1735), Gen ed 1, 286.

Fls com monoecious: perianth of 3-5 divisions: bracts 3 to each fl: sta with fl spreading at base: stlg com 3, forming 3 beaks on fr: sds brown or bk, dropping readily when ripe. Amaranth. **A. ALBUS** L, Sp Pl ed 2 1404. B 2:41. Da 15. Greene, Cal ac b 2:411, Cruz. A 1:217 d. Ab 133. Z 1:125.

McClatchie, Erythra 2:79. Cat.

Parish, Zoe 1:112.

Davidson, Erythra 1:99, LA Co.

Type locality: "In Philadelphiae maritimis."

Coville, CNH 4:179. Nev, etc.

A. ELITOIDES Wat, Am ac pr 12:273 (1877). B 2:41. Ab 133. Da 15. A 1:217 d.

Abrams, Fl LA 133.—"Common about Rialto."

A. BLITUM L, Sp Pl ed 1, 990. B 2:42. Eu.

Variety **GRAECIZANS** Moquin, DC Prodr 263. B 2:41 as A. albus.

A. CALPORNICUS Wat, B 2:41.

"Prostrate or ascending, glabrous, branching at the base, the sts often a ft lg or more, with num sh branchlets: lvs obovate to oblong, an i lg or less including the petiole, oft sm, obtuse or acutish, with w veins and margin: fls g or r'ish, in num sm dense axy clusters: bract oft membranous and inconspicuous, lanceolate, acuminate, slightly or not at all exceeding the utricle: sep of the stam fls $\frac{3}{4}$ " lg; that of the fertile fl shorter and narrower, lateral: utricle slightly rugose, tardily circumscissile: sd $\frac{1}{2}$ " broad. Menga Californica Moquin in DC Prodr 13:11, 270; Wat bot King 296. From SD (Palmer) to Monterey (Hartweg); near Carson City (Anderson, Torrey): and northward in Idaho and Ore." Wat. B 2:42. Hansons!

Europe; a widely distributed weed.

A. CHELOBOSTACHEYS Willd, Anar 34 t 10 f 19. Eu. B 2:41. Parish., Z 1:125.

Spikes slender than in A. retroflexus, linear-cylindric, more or less flexuous, the lateral ones spreading or divaricate: whole plant com deeper g: lvs ovate or rhombic-ovate, acutish or obtuse: sep more com acute or acuminate. Mex to British Am.

A. DEFLEXUS L, Mant 2:295. Eu. Ab 133. A 1:217 d.

Abrams, Fl LA 133. Redondo, Greata. A ballast plant introduced from tropical America.

A. FIMBRIATUS Wat, B 2:42.

"Monoecious, erect, slender, 1-3° hi, sparingly branched or simple, glabrous: lvs linear, 1' or 2' lg, attenuate into a slender petiole, obtuse or acute, obscurely nerved: fls in rather loose clusters, scattered or approximate in a lg terminal spike, which is leafy below: bracts shorter than the perianth, narrow, acute: sep of sterile fls obtuse, oblong; these of fertile fls broadly fan-shaped, 1-1 $\frac{1}{2}$ " lg, with a nar thickened strongly nerved base, slightly united, the upper margin fimbriately incised: sd round-ovate, less than $\frac{1}{2}$ " broad. Sarratia Berlandiera var. fimbriata T, bot Mex bound 179. Amblogyne fimbriata G 5:168." B 2:42. SD Co; Utah and the Rio Grande; Cape San Lucas (Xantus).

Europe; widely naturalized; pig weed.

A. GRAECIZANS L, Sp Pl 990.=A. sylvestris fide IK. Ab 133 cites A. albus as a synonym.

A. PALMERI Wat, Am ac pr 12:274

"Dioecious, rather stout, erect, 2 or 3° hi, branching, somewhat pubescent above or glabrate: lvs oblong-rhomboid, 1' or 2' lg and about equalling the petiole, the upper linear lanceolate: fls in close elongated linear spikes leafy at base: bracts solitary, mostly twice

longer than the fls, spreading, subulate and rigid, narrowed into a stout awn: sep of fertile fls 1-1½" lg, oblong and somewhat broader above, obtuse or retuse, 2 or 3 com slightly larger and more acute or setaceous apiculate, distinct or nearly so: stig com 2: sd circular, ½" broad." B 2:42. Jacumba, SD Co. Banks of the Rio Grande. Calis weed of CD; 10° hi. Magdalena bay and Island.

SD! Quintin (Palmer 705).

A. PANICULATUS L, Sp Pl ed 2, 1406. B 2:41.

A. RETROFLEXUS L, Sp Pl 991. B 2:41. Ab 133. Parish Z 1:125. Da 15; Erythraea 1:99, La Co.

Sts stout, erect: lvs ovate, 1-3' lg, on petioles almost as lg: fls g, in thick, erect, crowded spikes, either terminal or axy: perianth divisions 5. A com weed. Eu.

Southern California; Baja.

A. TORREYI Benth ex Wat B 2:42. Colo. NM. Baja (Cape San Lucas).

Colo; N. M.; Cape San Lucas (Xantus). **A. VISCIDULUS**. P 3:344.

AMARENUS C Presl Symb bot 1:46 (1830). =Trifolium fide IK.

A. AGEAEUS C. Presl, S-B, 1:46. P 3: 205 as Chrysopsis agraria.

A. AUREUS Fourr. in Ann L sc Lyon 16:362 (1868). P 3:204 as Chrysopsis aurea.

A. BADIUS C Presl, S-B 1:46. P 3:206 as Chrysopsis badia.

A. PROCRUMBENS C Presl, S-B 1:46. P 3:206 as Chrysopsis procumbens.

A. SPADICEUS C Presl S-B 1:46. P 3: 205 as Chrysopsis spadicea.

AMAURIA Benth, bot Sulph 31 (1844).

A. ROTUNDIFOLIA Benth, bot Sulph 31. B 1:385.

A. DISSECTA G Pl Fendl 104. NM.

AMELION Raf, Am Mo mag 1818, 265. =Fritillaria fide IK.

A. FUDICUM Raf Am mo mag 1818, 265. B 2:170 as Fritillaria pudica.

AMBOGYNA Raf Fl Tell 3:42 (1836). =Amaranthus L, fide B 2:242.

A. FIMBRIATA G 5:167, 168. B 2:42 as Amaranthus fimbriatus.

A. TORREYI G 5:167, 169. B 2:42 as Amaranthus Torreyi.

AMBLYOPAPPUS H & A, Hook J bot 3: 321 (1841). A 1:255 d.

A. PUSILLUS H & A, Hook J bot 3:321. A 1:255 d. P 1:265, San Benito Island; 1:88, Mig. B 1:385. Ab 431. Z 1:208.

Br 1:213, Rosa. Greene, Cal ac b 2:404, Cruz.

AMBLYSTEGIUM Schimp. B 2:417 as Hypnum.

A. RADICALE Bruch & Schimp. B 2: 418.

A. RIPARIUM Bruch & Schimp. B 2: 418 as Hypnum riparium L.

A. SERPENS Bruch & Schimp. B 2:418 as Hypnum serpens L.

A. VACILLANS Sulliv. B 2:418 as Hypnum riparium.

AMBROSIA L, Gen ed 1, 287 n 718 (1737).

Monococious branching herbs or shrubs, with alt or opp mostly lobed or divided lvs and sm hds of g fls, the stam spicate

or racemose, the pist solitary or clustered in upper axils: inv of pist hds globose-ovoid, closed, 1-fld, com armed with 4-8 tubercles or spines; cor 0; papus 0: inv of stam hds hemispheric, 5-12-lobed, open, many-fld; cor funnel-form, 5-toothed; anth scarcely coherent, mucronate-tipped. Ragweed.

A. ACANTHICARPA Hook Fl Bor Am 1:309 =Franseria Hookeriana fide. B 1: 345.

A. ARTEMISIAEFOLIA L, Sp Pl 988. B 1:344.

Ann. 1-3° hi, roughish-hirsute: lvs thinnish, twice pinnatifid: fr-inv smooth below, not reticulated, armed with about 6 very acute spines. Roman Wormwood, Bitterweed. Nev, Ore.

N. S., Texas, Wash, and So Cal (?). A widely distributed weed.

A. CORONOPIFOLIA T & G Fl 2:291. B 1:344 as A. psilostachya.

A. PSILOSTACHYA DC Prodr 5:526. B 1:344. Ab 412. Da 9. Greene, Cal ac b 2:402, Cruz. Br Z 1:114, Cat, Ha 123.

Baja! Tex, Ill.

Sts erect from horizontal rt-stocks, 5-8 dm hi, with strigose pubescence and somewhat scabrous; lvs once or twice pinnatifid: fr mostly solitary in axils, turgid-ovoid, about 3 mm lg, obtusely sh-pointed, rugose-reticulate, either unarmed or with 4 sh or sharp tubercles. A com weed.

Ill.; Texas; Mexico; San Ber (Parish 622); Cruz; Santos (Miss F. E. Flsn).

A. PUMILA G 17:217.

Per, span or 2 hi, from slender running rt-stocks, canescent throat with a dense and close silky pubescence, very ify: lvs nearly all alt and lg-petioled, 2-3-pinnately parted into linear-oblong crowded lobes: sterile hds in a sh spike: fr obovoid, pubescent, mucous, 1" lg (rarely 2 are connate at base). SD.

SD (Nuttall, Cleveland, Orcutt).

A. TENUIFOLIA Spreng, Syst 3:851. B 1:346 as Franseria tenuifolia.

AMELANCHIER Medic Phil bot 1:135 (1789).

Shrubs or sm trees: lvs decid: fls large, w, in racemes: ova 5-celled, becoming a part of the berry-like ex, each cell partially divided by a partition from the back, 1-seeded.

A. ALNIFOLIA Nutt, Phila ac J 7:22 (1834). B 1:190. Par 88. Z 2:102, 349. P 3:71, 4:129. Ha 85.

Lvs rounded, serrate toward apex: pet nar-oblong, near 1' lg: fr p and edible when ripe. Thru Cal, BC, Rocky mts, Colo. Variable.

A. BAKERI. P 4:128, Colo.

A. CANADENSIS Medic Gesch 79. T & G, Fl 1:473.

Variety **ALNIFOLIA** T & G Fl 1:473. B 1:190 as A. alnifolia.

A. CRENATA. P 4:127. NM.

A. FLORIDA Lindl bot reg t 1589. B 1:190 as A. Alnifolia.

A. GORMANI. P 4:129, Alaska.

A. PALLIDA. P 4:21.

A. POLYCARPA. P 4:127, Colo.

A. PRUNIFOLIA. P 4:21, Colo.

A. SUBINTEGRA. P 5:109. Cal.

A. VENULOSA. P 4:21. A 1:38 fdr.

A. RUBESCENS, P 4:128. NM.

AMIANTHIUM G, Ann Lyc NY 4:121 (1848).—*Zygadenus* fide IK.

A. NUTTALLII G, Ann Lyc NY 4:123. B 2:183 as *Zygadenus venenosus*.

Variety **PANICULATUS** Nutt, Phila ac J 7:57. B 2:184 as *Zygadenus paniculatus* Wat.

AMIDA Nutt, Am Phil sc tr, sr 2, 7:390 (1841).—*Madia* fide IK.

A. GRACILIS Nutt. B 1:360 as *Madia glomerata*.

A. HIRSUTA Nutt. B 1:360 as *Madia glomerata*.

AMMANNIA L, Gen ed 1, 337 (1737). A 1:328 d. B 1:214.

A. COCCINEA Rottb, Pi Hort Univ 7 (1773). A 1:328 d. Ab 261. Da 6.

A. HUMILIS Michx, Fl Bor Am 1:93. B 2:447.

A. LATIFOLIA L, Sp Pl 119. B 1:214. 2:447. Z 2:229.

See *A. coccinea* for the Cal plant.

AMMOBEROMA T, Am Lyc NY 8:51 t 1 (1867).

Fls covering upper surface of a dilated concave receptacle: sep about 10, filiform, plumose: cor lobes and sta 6-10.

A. SONORAE T, Ann Lyc NY 8:51 t 1. B 1:464.

Rt of thick tortuous fibres: sts simple, elongated, beset with lanceolate acute mostly appressed scales, summit dialted into a funnelliform receptacle, with recurved or spreading margins; the whole cavity densely lined with sh-pedicelled fls: cor about 4" lg: ova about 20-celled. Sonora. Baja. Very abundant in the desert sandhills bordering the Gulf of Cal, the whole plant except the top buried in the sand. Eaten by the Papago Indians after roasting or drying in the sun, when cooked luscious, resembling the sweet potato, only more delicate.

CD bordering the Gulf in Baja and Sonora.

AMMODIA Nutt, Am phil sc tr sr 2, 7:321 (1841).—*Chrysopsis* fide IK.

A. OREGANA Nutt. B 1:309 as *Chrysopsis* Oregana G.

AMORPHA L, Gen ed 1, 229 (1737). A 1:309 d.

A. CALIFORNICA Nutt, T & G Fl 1:306. A 1:309 d. B 1:140. Ab 221. Da 5. Par 320.

Hall, U 88.

Holzinger, *Erythra* 1:131-2.

Greene, *Erythra* 1:132-3.

A. hispida Greene Fl F 214 (1891).

A. FRUTICOSA L, Sp Pl 713. Torr, bot Bex bound 53. Holzinger, *Erythra* 1:131. Greene *Erythra* 1:132-3. B 1:140 refers Cal plants to *A. Californica*, Holzinger seeks to show this extends from Atlantic states to Ariz, Mex, SD, etc.

A. HISPIDULA Greene, Fl Fr 214 (1891); *Erythra* 1:132-3. A 1:309 as *A. Californica*.

A. TEXANA Buckl Phil ac pr 1861:452, M 1:30.—*A. laevigata* fide IK.

AMPHIACEYRIS Nutt, Am phil sc tr sr 2, 7:313 (1841).

A. FREMONTII G 7:633 (1873). B 1:303.

AMPHIAPAPPUS T & G, Post sc sr 1:210 (1844); Post J nat hist 5:107 (1847).—*Amphiachyris* fide IK.

A. FREMONTII T & G, Bost J 5:108. B 1:303 as *Amphiachyris* f.

AMPHARIDIUM Schimp B 2:376 as *Zygodon*.

AMISINCKIA Lehm, Del Sem Hort Hamb 7 (1831), A 1:207 d. B 1:523. Par 132.

A. DOUGLASIANA A DC, Prodr 10:118.—*A. spectabilis* fide B 1:524.

A. ECHINATA G 10:54. B 1:524. A 1:207 d.

Nutlets beset with prickly projections.

Mohave region (Cooper).

A. GRANDIFLORA Kleeberger. B 1:525 as *A. vernicosa* var. *grandiflora* G. A 1:207 d.

Nutlets smooth and polished, Antioch, Cal.

A. INTERMEDIA F & M, Ind Sem H P 2:26 (1836). A 1:207 d. B 1:524. Ab 335. Br 1:215, Rosa. Greene, Cal ac b 2:407, Cruz.

Nutlets much incurved, carinate dorsally: cor under $\frac{1}{2}$ i long.

Fls chrome y' with orange spots at base of the divisions of the cor. Cruz, Baja.

British Columbia to Quintin! Cruz; Cat; Rosa.

A. LYCOPSOIDES Lehm, Del Sem Hort Hamb 7 (1831). Greene, Cal ac b 2:407, Cruz. B 1:524. P 1:91 Mig. Z 2:365.

Da 12. Ab 335. A 1:207 d.

Nutlets brown or blackish, muriculate and rugose, minute.

Br Zoe 1:114. Cat. Da 12.

A. SPECTABILIS F & M, Ind Sem H P 2:26 (1836). A 1:207 d. Ab 335. B 1:524. Da 12. Par 133.

Nutlets somewhat flattened laterally, reticulate-rugulose, granulate.

Parish, Zoe 5:117, recognizes only this species in So Cal. Plumas Co to Quintin.

F. & M, Sem Petrop 2:26 (1835).

Parish, Zoe 5:117, recognizes only this species in So Cal. Plumas Co to Quintin!

Hall U 108.

Type locality: not given.

Coville. CNH 4:166, near SBer.

A. TESSELLATA G 10:54. A 1:207 d. B 1:524.

Nutlets much flattened on back, with coarse granulations.

Contra Costa range to Baja mts! Utah; Nevada; Cat.

A. VERNICOSA H & A, bot Beech 370. B 1:525.

Variety **GRANDIFLORA** G, B 1:525. See *A. grandiflora*.

AMSONIA Walt, Fl Car 98 (1788). B 2:462.

A. EREVIPOLIA G 12:64. Utah, Ariz. B 2:462. Mohave (Parish 1832).

ANACALYPTA Roehl. B 2:360 as *Pottia*.

A. STARKIANA Hedw. B 2:362 as *Pottia Starkiana*.

ANACHARIS Richard, Mem Inst 2:62 (1811).—*Elodea* fide IK. B 2:129.

A. CANADENSIS Planch, Ann sci nat sr 3, 11:75 (1849). B 2:129.—*E. canadensis* fide IK.

ANAGALLIS L, Syst ed 1 (1735). A 1:377 d.

- A. ARVENSIS** L, Sp Pl 148. Eu. Asia. A 1:377 d. Ab 300. B 1:469. Par 130. Da 11. Z 1:123. 2:364.
- ANANTHERIX** Nutt., Gen Am 1:169 (1818). = *Asclepiadora* fide IK. B 1:477 as *Gomphocarpus*.
- ANAPHALIS** DC, Prodr 6:271 (1837). B 1:340.
- A. MARGARITACEA** BENTH & Hook Gen 2:303. B 1:341. Par 104.
- A. OCCIDENTALIS** M 1:46 based on *A. margaritacea* var. *occidentalis* Greene, Fl Fr 399 (1897).
- A. SIERRAE** M 1:147.
- A. SUBALPINA** M 1:147.
- ANCISTROCARPHUS** G 7:355. = *Micropus*.
- A. FILAGINEUS** G 7:356. B 1:337 as *Stylocline filaginea*.
- ANDEACA**.
- A. MACOUNII** Z 1:94 (Moss.).
- ANDROMEDA** L Syst ed 1 (1735).
- ANDROMEDA ARBorea** Linnaeus.
- See *Oxydendrum arboreum*.
- A. BRACTEOSA** DC Prodr 7:607. B 1:453 as *Arctostaphylos tomentosa*.
- ANDROMEDA "CALIFORNICA"** pkt. 10c.
- A. CUPRESSINA** Hook, Fl Bor Am 2:38. B 1:456 as *Cassiope Mertensiana*.
- A. MERTENSIANA** Bong, Veg Ins Sitcha 152 t 5. B 1:456 as *Cassiope M.*
- A. POLIFOLIA** P 3:81.
- A. VENULOSA** DC, Prodr 7:607. B 1:453 as *Arctostaphylos pungens*.
- Andropogon** L, Sp Pl ed 1, 1045 (1753).
- Slender or rather coarse per with solid culms: Spikelets heterogamous, in pairs at each joint of the articulate and com hairy rachis, one of each pair sessile, hermaphrodite and 1-fld, the other pedicellate and stam or rudimentary: glumes of fertile spikelet 4, the first coriaceous, flattened on the back with a strong nerve near each margin and usually with fainter ones between, second glume hyaline awned: sta 3: sty distinct; stig plumose: unfurrowed, free within the hardened outer glumes.
- A. DISSITIFLORUS** Michx, Fl Bor Am 1:57. = *A. virginica* fide IK.
- A. GLOMERATUS** B S P. Ab 20.
- Culms erect, 4-6 dm hl, smooth, simple below, much branched above, upper nodes of branches barbed; sheaths compressed, glab or pubescent; lvs 2-4 mm wide, scarbrous, long acuminate, nearly equaling the culms, those of the culms 15-45 mm lg; branches elongated, forming a compact terminal inf; spikes in pairs, about 25 mm lg, loose, protruding from sides of seabrous sheaths; rachis flexuous, joints and pedicels pubescent with lg spreading silky hairs; outer glume about 3 mm lg; awn 12-18 mm lg, scarbrous; pedicelled spikelet reduced to a single scale or 0.
- A. MACROBURS** Michx, Fl Bor Am 1:56. McClatchie, Erythea 2:77, Gabriel mts. Ab 20 as *A. glomeratus*.
- A. SACCHAROIDES** Swartz, Prodr Veg Ind occ 26. Da 20, Erythea 2:30, Cat. Ab 21. Baja! Colo. Kans.
- Culms erect, 4-10 dm hl, simple or branched, glab, the nodes pubescent with silky hairs; sheaths smooth; lvs 8-16 cm lg, 4-6 mm broad, long-acuminate, scarbrous, glaucous, ligule hairy; spikes 25-35' mm lg, in an exserted panicle, 5-10 cm lg; first glume of sessile spikelet ovate-lanceolate, 4 mm lg, about equaling the terminal hairs of the rachis joints, pubescent at base with lg silky hairs, scarbrous above; awn 10-15 mm lg, spiral, bent, scarbrous; pedicelled spikelet reduced to a single narrow scale.
- A. SORGHUM** Brot, Fl Lusit 1:88. Da 20, Erythea 1:102, LA Co. = *Sorghum vulgare* fide IK.
- A. TORREYANUS**, Steud, nom ed 2, 1:93. Br, Fl Colo 230. = *A. saccharoides* fide IK.
- ANDROSACE** L, Syst ed 1 (1735). B 1:468.
- A. ARGUTA** P 4:148. Bering Strait.
- A. ASPELLA** P 4:150. Ore.
- A. CAPILLARIS** P 4:148. Colo.
- A. CHAMAejasme** Willd, Sp Pl 1:799. Parry. Pl Wyo 11.
- A. DIFFUSA** P 4:150.
- A. FILIFORMIS** Retz, Obs 2:10. P 4:148. B 1:468.
- A. GORMANI** P 4:149. Alk.
- A. PINETORUM** P 4:149. Colo.
- A. SEPTENTRIONALIS** L, Sp Pl 142. B 1:468. 2:462. Parry, Pl Wyo 7. P 4:149, 150. Not believed by Greene to exist in Am (P 4:150).
- ANDROSTAPHYLIUM** T, bot Mex bound 218.
- A. BREVIFOLIUM** Wat, Am nat 7:303 (1873). B 2:157. Utah. Ft Mohave, Cal.
- A. VIOLACEUM** T, bot Mex bound 219. B 2:157. Tex. Kans.
- ANEMIA** Nutt, Ann nat hist sr 1, 1:136. = *Houttuynia* fide IK. B 2:78, as *Anemopsis*.
- ANEMONE** L, Syst ed 1 (1735).
- Wind flower. Per herbs, the sts and radical lvs from a horizontal rtstock; cauline lvs 0 except an inv whorl of 3, com distant from the solitary or umbellate fls; sep 5 or more, petaloid, imbricate; pet 0: sta num: ak num, merely pointed: sd suspended.
- A. ALPINA** Hook Fl 1:5 not L. B 1:3 as *A. occidentalis* Wat.
- A. BOLDENSIS** Hook, Fl Bor Am 1:15. B 2:424 as *A. Drummondii*.
- A. DELTOIDEA** Hook, Fl Bor Am 1:6 t 3 f A B 1:4. 2:424.
- A. DRUMMONDII** Wat B 2:424.
- A. GRAYI** Behr ex K, Cal ac b 1:5. P 1:48. Cal.
- A. MULTIFIDA** Poir, Enc 1:364. B 1:4. 2:424. Parry, Pl Wyo 11.
- A. NEMOROSA** L, Sp Pl 541. B 1:4. 2:424. Par 20 as *A. quinquefolia*.
- A. OCCIDENTALIS** Wat, Am ac pr 11:121. B 1:3.
- A. FUSILLA** Gaertn, Com Petr 14:543 t 19 f 2, 3. = *Geum anemonoides* fide I K. P 4:49 as *Sieversia pentapetala*.
- A. QUINQUEFOLIA** L Sp Pl 541. Par 20 t. = *A. nemorosa* fide IK.
- A. PATENS**.
- Variety **ROSEA** Cockerell W 5:5.
- Variety **NUTTALLIANA** G Cockerell. W 5:5.
- ANECIO**.. P 4:103.

ANEMOPSIS Hook. Am nat hist 1:136. =Houttuynia fide IK. B 2:77.

Sts nodose scape-like, stoloniferous from aromatic creeping rtstocks: lvs mostly radical, minutely punctate: fls in a compact spike surrounded at base by a persistent colored inv of 5-8 bracts; each fl except the lowest also surrounded by a sm colored bract: sta 6-8: ova sunk in the rachis of the spike, 1-celled; stig 3-4: cap dehiscent at apex. Yerba Manse.

A. BOLANDERI C DC, Linnaea 37:333. Cal. B 2:78 as probably A. Californica.

A. CALIFORNICA Hook & Arn, bot Beech 390 t 92. Par 78 t. B 2:78, 483. Da 16. Ab 96. W 10:135. Cov 192. Block, Er 2:39, notes medicinal values.

St 15-50 cm lg, with a broadly ovate clasping lf above the middle and a fascicle of 1-3 sm petioled lvs in axil; basal lvs elliptic-oblong, rounded above, more or less narrowed toward the cordate base, 5-15 cm lg, on petioles 10-20 cm lg; spikes 1.5-4 cm lg; inv bracts w, often rish beneath, oblong, 1-3 cm lg; fl-bracts w, obovate, unguiculate, 5-6 mm lg; ovules 6-10 on each placentia.

Anemia Californica Nuttall, Ann Nat Hist 1:136 (1838).

Type locality: "springy bogs and open marshes by streams around SBar and SD."

ANETHUM.

A. GRAVEOLENS. Parish Z 1:10. "apparently established in LA. (H. E. Hasse)."

ANGELICA L. Syst ed 1 (1735). A 1: 274 d. B 1:265.

A. BEEVERI G 7:348. B 1:265. Z 2:163.

A. CALIFORNICA Jepson, Er 1:8.

A. HENDERSONI. Z 2:354.

A. LINEARILOBA G 7:347. B 1:266.

A. TOMENTOSA Wat, Am ac pr 11:141. B 1:265. Er 1:8. A 1:274 d.

Jepson Erythra 1:8.

Hall, U 98.

Mendocino Co. to SBar mts (Parish).

A. WHEELERI Wat, Am nat 7:301. Z 2:229.

ANISEIA Choisy, Mem sc Genev 6:481 (1833). =Ipomaea fide IK.

A. AUREA K 5:83. =I. aurea K in herb, fide Curran. Cal ac b 1:143.

A. AZUREA. K 5:89.

Curran, Cal ac b 1:143, says "it agrees very well with the description of Jacquemontia tannifolia. Dr." Gray refers it to J. abutiloides Benth."

ANISOCARPUS Nutt, Am phil sc tr sr 2, 7:388 (1841). =Madia fide IK.

A. BOLANDERI G 7:360. B 1:359 as Madia Bolanderi.

A. MADIODES Nutt, Am phil sc tr sr 2, 7:388. B 1:358 as Madia Nuttallii.

ANISOCOMA T & G Bost J nat hist 5: 111 t 13 (1844).

Hd many-fld: inv cylindraceous, imbricated; scales all obtuse, thin-herbaceous, with broad whitish-scarious margins, the inner broadly linear and equal; the others comparatively sh and broad, oval, or the outermost nearly orbicular: receptacle flat, furnished with lg and bristleform chaff subtending the fls: ligules conspicuous: ak linear-turbinate, terete, 10-nerved, silky-pubescent, attenuate to a sharp point at base, the

truncate summit crowned with a nar cup-like border or ring: pappus very w, of 10 or more rather rigid bristles; the about 5 longer ones (equalling inv) long-plumose above the middle; the others much shorter and less plumose or oft quite naked. 1 sp.

A. ACAULE T & G, Most nat hist sc J 5; 111 t 13. B 1:431.

A low but showy, st-less winter ann, glabrous at maturity, tho when young with w-woolliness, which fringes the edges of the sh and rosulate-tufted runcinate radical lvs: scapes a span or less hi, naked: hd 1' or more lg: cor y. Nev. Mohave.

ANODA Cav Diss 1:38 to 10 f 8 (1785).

A. CRENATIFLOEA Ortega, Hort Matr Dec 96? Br 2:133, Comundu canon, Baja, "near A. parviflora."

A. HASTATA Cav, Dis 1:39 t 10 f 3. Br 2:133. Baja (Comundu canon).

A. PENTASCISTA G, Pl Wright 2:22. Br 2:133, Purissima, Comundu, Baja.

ANOGRA Spach in Nouv Ann Mus Par 4:339 (1835). =Oenothera fide IK.

A. CALIFORNICA Small, Ab 452. Based on Oenothera californica Wat.

Sts decumbent from a running rtstock, 1-2 dm lg, branching; herbage hoary-pubescent and more or less villous; lvs narrowly oblanceolate, sinuately toothed or pinnatifid, 6-8 cm lg: ova and ex villous; ex-tube 2 cm lg; pet w turning p, lobed at apex, with a rounded sinus; cap 4-6 cm lg. SBar! SD! Mohave, Baja!

ANOMODON Hook & Tayl. B 2:407.

A. CALIFORNICUM Lesq, Cal ac mem 1:30. B 2:407. Mt Diablo (Bolander).

ANTENNARIA Gaertn Fruct 2:410 t 167 (1791). Par 104.

A. AIZOIDES. P 3:283.

A. ALSINOIDES. P 4:83.

A. ALPINA Gaertn, Fruct 2:410. B 1: 339. P 3:283.

A. ANGUSTIFOLIA Rydl Torr Cl b 26: 546 (1899). Nelson, US Nat Mus pr 23: 706, as A. rosea angustifolia.

A. AFRICA. P 3:282. 4:82.

A. ANGUSTATA. P 3:284.

A. AENOGLOSSA. P 3:318. 4: 83, 281.

A. ARGENTEA Benth, Pl Hartw 319. Z 2:163. B 1:340 as A. luzuloides var. argentea.

A. ARIDA Nelson, bot gaz 27:210 (1599). Wyo.

Variety **VISCIDULA** Nelson, US Nat Mus pr 23:710.

A. AUSTEOMONTANA Nelson, US Nat Mus pr 23:703. Utah.

A. BOREALIS. P 4:85.

A. ERACTEOSA Rydb, NY bot gard mem 1:413 (1900). Nelson, US Nat Mus pr 23:708. Mont.

A. CALOPHYLLA. P 3:347.

A. CAMPESTRIS. P 3:275.

A. CANADENSIS. P 3:275.

A. CARPATHICA. R Br, Linn sc tr 12: 123. B 1:339. P 3:176.

A. CONGENUA Nelson, US Nat Mus pr 23:705. Wash. Ore.

A. CONFINIS. P 4:40.

A. COREMBOSA. Nelson, bot gaz 27:212 (Mr 1899). US Nat Mus pr 23:707 as A. nardina P 4:82 (D 1899).

A. DECIPiens. P 3:278, 321. 4:281.

A. DIMORPHA T & G Fl 2:341. Parry, Pl Wyo 4. B 1:339.
A. DIOICA Gaertn. Fruct 2:410 t 167 f 3. B 1:339. P 3:274. Parry, Pl Wyo 7. SBar (Wright). SD mts (Parish). Alk. Eu. Asia.

Alaska; Europe; Asia; S D mts (Parish). Variety **GONGESTA**. Z 2:248.

A. EXILIS. P 3:288. P 3:321. 4:281.

A. FARWELLII. P 3:347.

A. FLAVESCENS Rydl, NY bot gard mem 1:411 (1900). Nelson, US Nat Mus pr 23:703 as A. reflexa.

A. FOLIACEA. P 3:279. 4:284.

A. FUSCA Nelson, bot gaz 30:120. US Nat Mus pr 23:703. Wyo.

A. GEYERII G. Pl Fendl 107. B 1:340.

A. HOLMII. P 4:81.

A. HOWELLII. P 3:174, 276.

A. GLABRATA. P 3:285.

A. HYPERBOREA. P 3:280.

A. IMBRICATA Nelson, bot gaz 27:211 (1899). US Nat Mus pr 23:707 as A. rosea imbricata.

A. INSULARIS. P 3:276.

A. LABRADORICA. P 3:285.

A. LARATA. P 3:288.

A. LUZULOIDES T & G Fl 2:430. B 1:340. Z 2:163. Parry, Pl Wyo 13. Variety **ARGENTEA** G. Pac Ry R 4:54. See A. argentea.

A. MACOUNII. P 3:276.

A. MARGINATA. P 3:290.

A. MARGARITACEA. R Br. Linn sc tr 12:123. B 1:341 as Anaphalis m. Br Z 1:114. Cat.

A. MICROCEPHALA G 10:74. B 1:340. **A. MICROPHYLLA** Rydb, Torr cl b 24:303 (1897). Nelson, US Nat Mus pr 23:708 as A. parvifolia Nutt.

A. MICROPHYLLA Rydl, Torr cl b. P 3:280 as A. parvifolia.

A. MONOCEPHALA. P 3:176, 285.

A. MONTANA. P 3:274.

A. MEDIA. P 3:286. 4:84.

A. MESOCHORA. P 5:111.

A. NARDINA. P 4:82.

A. NEMORALIS. P 4:41.

A. NEODIOICA. P 3:184, 280. 4:83.

A. NEGLECTA. P 3:174, 274.

A. NITIDA. P 3:283.

A. OCCIDENTALIS. P 3:322. 5:111.

A. OXYPHYLLA. P 4:284.

A. PALLIDA Nelson, US Nat Mus pr 23:700, based on A. borealis P 4:85 (not Gandoger, 1887).

Type locality:—"Disenchantment bay." Alk.

A. PARLINII. P 3:277.

A. PLANTAGINIFOLIA. M 1:5. P 3:173, 277. 4:283.

A. PARVIFOLIA. P 3:175, 280.

A. PEKURELLATA. P 3:175, 280.

A. PETASITES. P 3:277.

A. PROFINQUA. P 4:83.

A. PULCHERRIMA. P 3:176.

A. PULVINATA. P 3:287.

A. RACEMOSA Hook Fl Bor Am 1:330. B 1:338. Parry, Pl Wyo 13.

A. RECURVA. P 3:290.

A. REFLEXA Nelson, bot gaz 27:208 (1899). US Nat Mus pr 23:703. Wyo.

A. ROSA. P 3:281. 4:81.

A. RESULATA Rydb, Torr cl b 24:300 (1897). P 3:289.

A. SCABIOSA Nelson, bot gaz 27:210 (1899). Wyo.

A. SOLITARIA. P 4:281.

A. SOLDIDA. P 4:281.

A. SPECIOSA E. Nelson, US Nat Mus pr 23:705 (1901). Ha 124.

"Cespitose, 10-17 cm hi, the stolons sh and lfy; lvs narly oblanceolate, acutish, 1-2 cm lg, about 4 mm wide, lightly hoary-tomentose or canescent and permanently so on both surfaces: hds 9-15 in a rounded cluster, nearly all pedicellate; inv about 7 mm hi; bracts (pist) num, imbricated, in about 4 series, the inner less than $\frac{1}{2}$ as broad and acute to acuminate, the nonherbaceous portion rose color or nearly w. Male plant unknown. Type locality:—Bear (Parish 3:354—in US Nat Hb). SBar and Jac (H. M. Hall 718, 1897) mts, Cal."—Nelson.

A. SUFFRUTESCENS. P 3:277.

A. TOMENTELLA Nelson, US Nat Mus pr 23:701. Wash.

A. UMBRINELLA. P 3:286.

ANTHRANTIS Raf, Fl Ludov 52, 149 (1817)=Asclepiodora fide IK.

A. FEDICELLATA Raf. P 3:207.

ANTHEMIS L. Syst ed 1 (1735). A 1:252 d.

A. COTULA L, Sp Pl 894. Eu. Af. Asia. Par 16. Da 16. Ab 434. Br 1:213. Rosa. A 1:252 d.

L, sp Pl 2:894 (1753). Eu.

Parish Zoe 1:59.

Abrams, Fl LA 434. Common in moist places in all our valleys. Native of Eu. Ap-My.

ANTHERICUM L. Syst ed 1 (1735).

A. FOMERIDIANUM Ker-Gawl, bot reg t 564. B 2:160 as Chlorogalum p.

ANTHEMELLES Roem. Syn 102, 140 (1847).—Crataegus fide IK.

A. DOUGLASSII Roem. Syn 3:140. B 1:189 as Crataegus Douglasii.

ANTHORANTHEUM L. Gen ed 1, 18 (1737).

A. ODCEATUM L, Sp Pl 28. B 2:266.

ANTHILLA Kunth. Enum 4:191 (1843).—Zygadenus fide IK.

A. FREMONTI T, Pac Ry R 4:144.—Z. Fremonti fide B 2:183.

A. NUTTALLII T, Pac Ry R 4:144.—Z. Nuttallii fide I K. B 2:183 as Z. venenosus.

ANTICONUM

A. LEPTOPUS.

Variety **SPLENDENS** K 5:102. Curran, Cal ac b 1:146, "Agrees very well with the d of A. cordatum Mart & Galeot."

Genus **ANTIRRHINUM** Tournefort.

L, syst ed 1 (1735). A 1:225 d.

A. APPENDICULATUM M 1:44 based on A. coulterianum var. appendiculatum Durand. A. vagens G 7:373.

A. BREWERI G 7:374. B 1:550.

A. CONFERTIFLORUM Benth, DC Prodr 10:592. B 1:552 as Mohavea Viscida.

ANTIRRHINUM COOPERI A. Gray.

G 7:376. A 1:225 n. B 1:551.

Utah; Ft. Mohave (Cooper).

A. CORNUTUM Bth 328. Cal. B 1:549.

A. CORUTUM Durand, Pac Ry R 5:111 t 10. B 1:549, as A. leptaleum G.

ANTIRRHINUM COULTERIANUM Bth. DC Prodr 10:592. Cal. A 1:225d. B 1:549.

Da 13. Ab 358. Par 42. Ha 115.

Santa Barbara to San Diego Co.



CANAIGRE

Variety **APPENDICULATUM** Durand, Pac Ry R 5:11 t 11. B 1:550 as *A. vagans*. M 1:44 as *A. appendiculatum*.
A. CYATHIFERUM Bth, bot sulph 40 t 19. B 1:548. Br 2:190, Magdalena Isl.
ANTIRRHINUM FILIPES A. Gray, G, bot Ives R 19. B 1:551. A 1:225 n. Arizona; San Diego (Or 1046).
ANTIRRHINUM GLANDULOSUM Lnl. Bot reg t 1893. Cal. A 1:225d. B 1:549. Da 13. Ab 358.

San Bernardino (Parish 436); Cruz. SBR (Parish 436). Cruz.
 Abrams, Fl LA 358. Gabriel mts. K. Pacific (2 F 1854). (G as *A. vagans*.) Cur 1:144, "must remain doubtful".
ANTIRRHINUM JUNCHEUM A. Gray. G 7:377. A 1:225d. Z 2:112.
 Cedros. *A. suffrutescent* plant 2-4 ft high, forming oval bushes, not observed far north of Quintin.

A. KINGII Wat bot king 215 t 21, Ut. B 1:550.

A. LEPTALEUM G 7:373, Cal. B 1:549.
A. MAURANDIOIDES G 6:376, Tex. B 51.

A. MAURANDIOIDES G 6:376, Tex. B 1:551.

ANTIRRHINUM NEVINIANUM A. Gray G, bot gaz 9:54. A 1:225 n.

Los Angeles (Nevin); S D Co!
ANTIRRHINUM NUTTALLIANUM Bh. Benth, DC Prodr 10:592. Greene, Cal ac b 2:408, Cruz.

Br 1:215, Rosa. B 1:550, 622. Da 13. Ab 358. P 1:92, Mig. A 1:225 n.

Sts branched from base, branches mostly procumbent, 5-10 dm lg, glandular-pubescent thruout; lvs ovate or subcordate, the largest about 2.5 cm lg, nearly all distinctly petioled; ped, at least the lowest ones, lg'er than fls, sometimes disposed to be tortile; sep sh'er than tube of vio cor; cor about 8 mm lg, lobes nearly equal; palate very prominent; sds almost alately costate.

Cruz; Rosa; SD! Guadalupe.

Variety **EFFUSUM** G, B 1:622. A 1:225 "Climbing over bushes, 5° hi: flg branches paniculate; pedicels all filiform and lg'er than fls: ribs of sds less wing-like; ex-lobes rather less unequal." —B 1:622.

Mohave (Palmer, Parry, Lemmon).

ANTIRRHINUM ORCUTIANUM A. G. G, bot gaz 9:53. A 1:225 n. Par 42.

A tall viscid annual with w or violet fls; S D; C D; Baja; L Co (Davidson).

ANTIRRHINUM SPECIOSUM A. Gray. G, 7:376, Cal. A 1:225 n. B 1:551. Br Z 1:112, Cat. Guad.

Gambelia speciosa Nuttall. Cat; Guad. **ANTIRRHINUM STRICTUM** A. Gray.

G, 7:375. A 1:225 d. Ab 358. Da 13. B 1:550. Greene, Cal ac b 2:409, Cruz.

Santa Barbara; SD! Baja!
ANTIRRHINUM SUBSESSILE A. Gray G, bot gaz 9:53. A 1:226. Ab 358. CNH 1:18.

Strongly glandular-pilose; lvs ovate, all sessile or nearly so; pedicels sh'er than the somewhat larger fls; lower lip of cor larger in proportion than in *A. nuttallianum*, which this somewhat resembles, but is less diffuse and erect. Cat.

SD! Quintin (Palmer 735).

A. VAGANS G, 7:375. Par 326 t. B 1:549. M 1:44 as *A. appendiculatum*.

A. VEXILLO-CALYCVLATUM K 1:27. Cur 1:144 as *A. vagans*?

A. VIRGA G, 7:373, Cal. B 1:549. Jepson, Er 1:12.

ANTIRRHINUM WATSONI Vasey-Rose CNH 1:13, 18. A 1:226 n. Son. Baja.

Sonora (Fringlie, Palmer); Quintin (Palmer 657); Magdalena and Santa Margarita Isl. (Br).

ANTITRICHIA Bridel. B 2:408.

A. CALIFORNICA Sulliv. Lesq, Am Phil sc tr 13:11. Sulliv & Lesq Muse

Phil sc tr 13:11. Sulliv & Lesq Musc sup 79 t 59. B 2:409. Oakland, Cal. Eu.

A. CURTIPENDULA Bridel. Bruch & Schimp, Bryol Eur t 467. Wilson, Bryol Brit t 22. Sulliv in G Man, Ed 2, t 4. Berkeley, Brit moss t 13 f 4. B 2:409.

Variety **GIGANTEA** Sulliv & Lesq, Musc Am Bor ed 2, n 356. Schimp Syn ed 2, 577. B 2:408. Redwood, Cal, on trees (Bolander).

Variety **HISPANICA** Schimp. B 2:409 as *A. californica*.

APARGIA Scop Fl Carn Ed 2, 2:113 (1772). = *Leontodon* fide IK.

A. BOREALIS Bong, Veg Sitcha 146. B 1:440 as *Apargidium boreale*. P 2:19 as *Scorzonella borealis*.

APARGIDIUM T & G Fl 2:474. = *Leontodon* fide IK.

A. BOREALE T & G, Fl 2:474. B 1:439.

Genus **APHANISMA** Nuttall.

Ex Moq, DC Prodr 13 (2):54.

Slender glab ann, with alt sessile entire lvs, and axyl mostly solitary perfect bractless fls: ex 3-cleft, with concave seg unchanged in fr; sta 1; fil sh: ova depressed; sty shortly 2-3 cleft; pericarp somewhat 5-angled, rather thick and indurate; sd horizontal, with very thin crustaceous testa; embryo annular surrounding the copious endosperm.

APHANISMA BLITOIDES Nutt. Ex Moq, B 2:45. Ab 124. Z 1:144.

Sts ascending, branched, 3-7.5 dm hi; lvs thin, oblanceolate to ovate-oblig, the upper ones ovate, acute, 6-15 mm lg; ex minute, its lobes ovate, obtuse, closely appressed to the base of the fr; fr 1 mm broad; sd shining, punctulate-rugose. SD! Quintin (Palmer 705).

Southern California.

APHANTOCHAETA G, Pac Ry R 4:99.

A. EXILIS G, Pac Ry 4:100. B 1:305.

APHORA Nutt in Am Phil sc tr ser 2, 5:174. = *Argythamnia* fide IK.

A. SERRATA Torr, bot Mex bound 197. B 2:69 as *Argythamnia serrata*.

Genus **APHYLLON** Mitchell.

Mitch in Oct Phys Med ac nat cur 8:221 (1748).

APHYLLON CALIFORNICUM A. Gray. G, B 1:584. Da 13. Br 2:192. El Rosario, Baja. Orobanchae californica C & S.

El Rosario, Baja (Br), near the coast; Nevada; SD foothills (Parish 392; Orcutt 231).

APHYLLON COMOSUM A. Gray. G, B 1:584. Orobanchae comosa Hook.

CD (Parish 1422); Monterey to Washington.

APHYLLON COOPERI A. Gray.

G 20:307. So Cal (Parish 1738). Br 2:193. "Purissima, El Rancho Vieja," Baja. Orobanchae Cooperi Heller.

APHYLLON FASCICULATUM A. Gray. T & G, G man ed 1, 281. Br 1:204 Cruz. Da 13. B 1:584. Par 176 t. Ab 374 as *Thalesia fasciculata* Britton. Ha 120. Cancer-root.

Sber (W. G. Wright) east to the Great Lakes. Cruz (Br), SD and Baja, not rare! **APHYLLON LUDOVICIANUM** A. Gray. G, B 1:585. Da 13. Orobanchae Ludoviciana Nutt.

SD, on roots of *Adenostoma*. (Orcutt 280); Sber foothills (Parish 903); near Ft. Mohave (Cooper); Texas; Illinois; Minnesota. The Mohave Indians are said to eat the bitter rootsticks. LA (Davidson). A. **MULTIFLORUM** G, B 1:585. Orobanchae multiflora Nutt.

A. **PINETORUM** G, B 1:585. Orobanchae pinetorum Geyer.

A. **TUBEROSUM** G, B 1:585, 2:476. Br 1:215 Rosa. Greene, Cal ac b 2:409, Cruz. Orobanchae tuberosa Heller.

APHYLLON UNIFLORUM A. Gray. G, Man ed 1, 290. B 1:584. *Thalesia uniflora* Britton.

Sber (W. G. Wright) to British Columbia, east to the Atlantic.

Genus APIASTRUM Nuttall.

T & G Fl 1:643. A 1:285 d. **APIASTRUM ANGUSTIFOLIUM** Nutt. T & G Fl 1:644. Ab 282. B 1:259. Da 7. A 1:285 d. P 1:88 Mig. Greene. Cal ac b 2:399, Cruz.

Brandegee, Zoe 1:114, Cat. Mendocino Co to Quintin; Cruz.

A. **LATIFOLIUM** Nutt. T & G Fl 1:644. B 1:259 as *A. angustifolium*, "the more coarsely dissected form."

APIOSPORIUM M 1:10.

Genus APIUM Linnaeus.

L syst ed 1 (1735). A 1:286 d. **APIUM GRAVEOLENS** Linn.

L sp pl 264. Eu. A 1:286 d. Da 7. Ab 284. Z 1:9. B 1:258.

Davidson. Erythra 1:59, LA Co. Parish, Zoe 1:9 (claims it is indigenous).

Wild celery; Europe, widely naturalized **APLECTRUM** T.

A. **HYEMALE** T. Compend 322; Fl NY 2:270 t 127. B 2:133. *Cymbidium hie-male* Willd.

Genus APLOPAPPUS Cass.

Cass in Dict sci nat 56:168 (1828). A. **ACAULIS** G 7:353. B 1:311.

A. **ALPIGENUS** T & G Fl 2:241. P 3:147 as *Oreastrum alpigenum*.

A. **APARGIODES** G 7:354. B 1:311. 2:454.

A. **ARENARIUS** Benth. bot. Sulph 24. (= *Asteris* sp? fide IK). B 1:314.

A. **ARMERIOIDES** G, Col exp bot 16, NM. Z 2:230.

APLOPAPPUS BERBERIDIS A. Gray. G, Syn Fl 1 (2) 126. A 1:199 n. Santos.

A. **BLOOMERI** G 6:541. B 1:313. Variety **SONNEI** P 2:17.

APLOPAPPUS CRUENTUS Greene. P 2:17. A 1:57 fdr. = *Hazardia cruenta* fide Greene.

APLOPAPPUS CUNEATUS A. Gray.

G 8:635, Cal. B 1:312. A 1:194 as *Chrysoma cuneata* Greene. *Bigelovia spathulata* G. Ar. Cantilles! Yosemite.

Bigelovia spathulata A. Gray. Yosemite; Ubi, Baja (Br); Arizona; Cantilles!

A. **ERICOIDES** H & A, bot Beech 146. B 1:313. P 1:89 Mig. Z 2:356.

A. **FLORIFER** H & A, bot Beech 351. B 2:455 as *Hownsendia florifer*.

A. **FREMONTI** G, Phil ac pr 1863, 65. P 3:46 as *Oonopsis wardi*.

APLOPAPPUS GRACILIS A. Gray. G Pl Fendl 76, Tex. B 1:613. Z 2:230. Cal. Baja.

Texas to So Cal. Baja (Br). A. **GREENEI** G 16:80. B 2:454.

A. **HAENKEI** DC Prod 5:349. B 1:321 as *Corethrogyne flaginifolia* var. *virigata* G.

Type locality: "Monterey, Cal." fide B 1:321, not Mex.

A. **INSECTICURIS** Henderson, Torr cl b 27:346 (1900). M 1:7 as *Pyrrcoma insecticuriis*.

APLOPAPPUS INTERIOR Coville. Cov, Wash biol sc pr 7:65. CNH 4:121. Ha 124. A 1:195 fdr.

Stenotus interior Greene *Erythra* 2:72 (1894).

Hall, U 124.

Ut; Ar; Inyo Co; SD Co.

A. **INULOIDES** T & G Fl 2:241. = A. *uniflorus* fide IK. Parry, bot obs Wyo 12.

APLOPAPPUS JUNCUS Greene. Cal ac b 1:190. A 1:57 fdr. = A. *spinulosus* fide IK.

A. **LANCEOLATUS** T & G Fl 2:241, Cal. A 1:1 n. B 1:312 n. P 3:23 n. Br, Col 227, 238.

A. **LACERATUS** Henderson, Torr cl b 27:347. M 1:7 as *Stenotus laceratus*.

APLOPAPPUS LARICIFOLIUS A. Gray. G, Pl Wright 2:80. NM. B 2:454. Tex, Ar, Mohave (Parish 905).

Texas to Arizona; Mohave (Parish 905). **APLOPAPPUS LINEARIFOLIUS** DC

DC Prodr 5:347, Cal. B 1:311. A 1:195. SF; Baja; Ut; Ar.

SF; Sber; SD; Baja; Arizona; Utah. A. **MACLEANII** Br, bot gaz 27:448 (1899).

M 1:7 as *Stenotus Macleanii*.

A. **MACRONEMA** G 6:542. B 1:314.

A. **MENZIESII** T & G Fl 2:241. B 1:315 as *Bigelovia Menziesii*. = *Isocoma vernonioides*.

APLOPAPPUS MONACTIS A. Gray. G 19:1. Cal. A 1:247 n. Cov 121.

Type locality: "borders of the Mohave Desert," Cal.

A. **MULTICAULIS** G, Am nat 8:213. P 3:45 as *Oonopsis multicaulis*. *Stenotus multicaulis* Nutt.

A. **NANUS** Eaton, bot king 159. B 1:314. A. **NEVADENSIS** K 3:9. Curran, Cal ac b 1:139 and B 1:311 as *A. acaulis*.

A. **NIVEUS** Wat, Am ac pr 23:227 (1888). P 3:43 as *Chrysopsis nivea*.

APLOPAPPUS ORCUTTHI A. Gray. G 20:297. Santos' = *Hazardia orcuttii* Greene.

APLOPAPPUS PALMERI A. Gray. G 11:74. Da 8. B 1:613. A 1:195 as *Chrysoma Palmeri*. Ha 124. CD; Baja!

LA Sber; SD; Baja! CD.

"Pasmore" of the Mexicans and In-

dians is reputed to be invaluable in cases of lockjaw.

A. PANICULATUS G 7:354. B 1:311. = *A. racemosus* fide IK. Greene, Er 3:12 as *Chrysoma paniculata*.

APLOPAPPUS PINIFOLIUS A. Gray. G 8:636. B 1:312. Ab 195 et A 1:195 as *Chrysoma pinifolia*. Da 8, Sber. Cov 122.

Type locality: "Near LA in a dry river bed."

A. RACEMOSUS T in Sitgreave R 162. B 2:454. Z 2:230.

A. RESINOSUS G, bot US exp 2:346. B 1:313. = *A. nanus* fide IK. B 1:313 as A. Bloomeri.

A. SPHAEROCEPHALUS G Pl Fendl 76. B 1:304 as *Acamptopappus sphaerocephalus*.

APLOPAPPUS SPINULOSUS Pursh. DC Prodr 5:347. B 1:314. A 1:57 n. Dakotas, Tex, Ar, Baja.

APLOPAPPUS SQUARROSUS H. & A. H & A, bot Beech 146. Greene, Cal ac b 2:400 Cruz. B 1:311. 2:454. Ab 400 as *Hazardia squarrosa*. Da 8. Monterey-Quintin!

Monterey; Quintin! Cruz. Da 8. **A. STENOPHYLLUS** G, bot US Exp Exp 2:347. B 2:454.

A. SUFFRUTICOSA G 7:542. B 1:313. Parry, Pl Wyo 17.

A. TENUICAILIS Eaton, bot king 160. B 1:312 as *A. lanceolatus*.

A. TORTIFOLIUS T & G, Bost J 25:109. = *Aster tortifolius* fide B 1:323. P 3:48 as *Xylorrhiza tortifolia*.

A. WHITNEYI G 7:353, Cal. B 1:312. P 3:43 as *Hazardia Whitneyi*.

Genus **APOCYNUM** Tournefort.

L, syst ed 1 (1735).

Per herbs with opp lvs and sm w or p fis in terminal and sometimes axy corymbed cymes: cx-lobes acute: cor campanulate, the tube bearing within 5 sm triangular appendages alt with sta: sta inserted on cor-base; anth sagittate connivent around stig and slightly adherent to it: disk 5-lobed: ova of 2 distinct carpels: ovules num in each carpel: stig ovoid, obtuse, obscurely 2-lobed: follicles slender, elongated, terete: sds sm, tipped with a large coma. Dogbane.

A. ALBUM P 3:230.

A. ANDROSASEMIFOLIUM Linn. L, sp pl 213. Ha 102. Par 242. B 1:473. Bot mag t 280. Bigelow, Med bot t 36.

Cor rose-color, with revolute lobes and a bell-shaped tube lg'er than cx; com much branched, fis num in loose cymes. Widely distributed, Atlantic coast; British Columbia; SD!

Variety **FUMILUM** G Syn Fl 2 (1) 83. Ha 102.

"A very low and peculiar round-leaved form, common from Sal to Brit Columbia."—G.

APOCYNUM CANNABINUM L.

L, sp pl 213. B 1:473. Da 11, Tb 305. Par 244. Ha 102.

Cor w, with erect lobes and tube not lg'er than cx: fis sm, in dense cymes. Marshes, widely distributed, Ore to Baja! Atlantic coast. Indian hemp, American Ipecac. A useful remedy in

many diseases, possessing diuretic, cathartic, emetic and diaphoretic properties in common with *A. androsasemifolium*.

APOCYNUM FLORIBUNDUM Greene. Greene, Er 1:151. A 1:6 fdr.

A. MEDIUM P 3:229.

A. LAURENUM P 5:65. NM.

A. OBLONGUM P 5:65. Middle Cal.

A. RHOMBOIDEUM P 5:66. Napa valley, Cal.

A. SALIGNUM P 5:64. Humboldt Co.

A. SUKSDORFII P 5:65. Ore.

A. VESTITUM P 5:66. Greene, Man Bay Reg.

AQUILEGIA L systs ed 1 (1735). A 1: 151 d.

A. CAERULEA James, Long Exp 2:345. B 1:10. Par 356. Cockerell w 5:6. Br, Colo 228.

A. CALIFORNICA G 7:328. B 1:10 as A. truncata.

A. CANADENSIS L sp pl 533.

A. CANADENSIS Torr, Pac Ry R 4:62. B 1:10 as A. truncata.

A. DESERTORUM M 1:27 based on *A. formosa* var. *desertorum* Jones, Cont 8:2. Cockerell Southwest (1900).

A. EXIMIA Van Houtte, Fl ser sr 2, 2:13 t 1188. B 1:10 as A. truncata. = *A. formosa* fide IK.

A. ELEGANTULA P 4:14.

A. FORMOSA Fisch, DC Prodr 1:50. B 1:10. Ore. Z 2:338.

A. LEPTOCERA Nutt Phil ac J 7:9. B 1:10 as *A. caerulea*.

A. MACRANTHA H & A bot Beech 317 t 72. B 1:10 as *A. caerulea*.

A. TRUNCATA F & M, Ind Sem Sup 8. Jar 354 t. A 1:151 d. = *A. formosa* fide IK. B 1:10. Da 1. Z2:161, 338. Ab 152.

ARABIS L, Gen ed 1 198 (1737). A 1: 111d.

A. ALBERTINA P 4:196.

A. ABCUTA G 6:187, Cal. P 4:192. B 1:33. 2:431. A 1:111d, 3 in part as *A. maxima* Greene. Br 1:202, Cruz.

A. AEDA P 4:190.

ARABIS BECKWITHII S. Watson.

Wat 22:467. A 1:5 fdr.

A. BLEPHAROPHYLLA H & A bot-Sulpt 321. Par 202. B 1:32.

A. BREWERI Wat Am ac pr 11:123. B 1:33.

A. BULBOSA Schreber. P 3:124 as *Dentaria rhomboidea*.

A. CAMPHYLOLOBA P 4:192.

A. CANESCENS Nutt, T & G Fl 1:83. B 1:32. 2:431. Parry, Pl Wyo 14.

A. CONNEZA P 4:197.

A. CONSANGUINEA P 4:190.

A. DENTATA T & G Fl 1:80. P 3:254 as *iodanthus dentatus*.

A. DOUGLASII P 3:124.

A. DREFANOLOBA P 3:306.

A. DRUMMONDII G 6:187. Parry, Pl Wyo 13. P 4:197.

Variety **ALPINA** Wat bot king 18, 8 1:32 as A. Lyallii.

A. DURUSCULA P 4:191.

A. EREMOPHILA P 4:194.

A. FENDLERI P 3:156. 4:194.

A. FILIFOLIA Greene, Cal ac b 2:390. P 3:11 as *Sibara filifolia*. A 1:110 s. Z 1:132.

A. FORMOSA P 4:198.

A. GLABRA Bernh, syst Verz Erf 195.

- Ab 179. A 1:111 d. = *A. Perfoliata* fide IK.
- A. GRACILENTA** P 4: 194.
- A. GRACILIPES** P 4:193.
- A. HIRSUTA** Scop Fl Carn ed 2, 2:30. B 1:32. Eu.
- A. HOLBOELLII** Hornem Fl Dan t 1879. Da 2. Z 2:227. B 1:33. 2:431. A 1:112 d. P 4:187.
- A. LONGIROSTRIS** Wat, bot king 17. B 1:131. Z 2:227. *Streptanthus longirostris* Wat.
- ARABIS MAXIMA** Greene. P 4:192. A 1:3 d.
- A. LUDOVICIANA** F & M Ind Sem 9:60. Ab 178 as *Virginica* Trelease.
- A. LYALLII** Wat Am ac pr 11:122. B 1:32. P 4:196.
- A. OXYLOBULA** P 4:195.
- A. OXYPHYLLA** P 4:196.
- ARABIS PARISHII** S. Watson. Wat, Am ac pr 22:468. A 1:4 fdr.
- A. PECTINATA** P 1:287. 3:11 as *Sibara pectinata*.
- ARABIS PERENNANS** S. Watson. Wat 22:467. A 1:4 fdr. Ha 81.
- A. PERFOLIATA** Lam Encyc 1:219. Eu. Asia. Br 1:202, Cruz. B 1:31. Da 2. Ha 41. A 1:112 s. Ab 179 as *A. glabra*. Tower mustard.
- A. PLATYLOBA** P 4:198.
- A. PLATYSFERMA** G 6:519. A 1:112 d. P 4:198. B 1:32.
- A. PUBERULA** Nutt ex T & G Fl 1:32. B 2:431 as *A. canescens*. Hook Ic t 359.
- ARABIS PULCHRA** M. E. Jones. M. E. Jones, ex Wat 22:468. Da Er 2:178. LA Co. A 1:4 fdr.
- A. PURPUREASCENS** P 1:161. Ore.
- A. RECONDITA** P 4:195.
- A. RECTISSIMA** P 4:191.
- A. RETROFRACTA** R Grah, Edinb Phil J 1827, 7. P 4:188. B 1:33 as *A. Holboellii*.
- A. RHODANTHA** P 3:155. 4:189.
- A. RHOMBOIDEA** Pers syn 2:204. P 3:124 as *Dentaria rhomboidea*.
- A. REPANDA** Wat, Am ac pr 11:122. A 1:112 d. B 1:32. Ab 178. Z 2:161.
- A. SECUNDA** P 4:189.
- A. SUBPINNATIFIDA** P 4:191. A 1.5 n.
- A. SPATHULATA** Nutt, T & G Fl 1:81. Ore. Nev. B 1:32.
- A. SUFFRUTESCENS** P 4:192.
- A. TENUIS** P 4:189.
- A. VIEGINICA** Trelease. A 1:112 d. Ab 178.
- ARAGALLUS** Neck. = *Astragalus* fide IK.
- A. ARCTICUS** P 3:211, based on *Oxytropis arctica* R Br App Parrys Voy 278. G 20:40. NA.
- A. BELLII** P 3:212, based on *Splesia Bellii* Britton, Can Rec Sci 148 (1894), Hudson bay region.
- A. BIGELOWII** P 3:212, based on *Oxytropis Lambertii* var. *Bigelovii* G 20:7. Colo. NM.
- A. CAMPESTRIS** P 3:211, based on *Astragalus campestris* L sp 761. El.
- A. CAUDATUS** P 4:69 Assinibola.
- A. FOETIDUS** P 3:211, based on *Astragalus foetidus* Villars Prosp 42 t 27 (1779). Eu.
- A. GRANDIFLORUS** P 3:210, based on *Astragalus grandiflorus* Pall; Ast, 57 t 46 (1800). Eu.
- A. LAGOPUS** P 3:212, based on *Oxytropis Lagopus*, Nutt, T & G Fl 1:340. Wyo. Mont.
- A. LAMBERTI** P 3:212, based on *Oxytropis Lambertii* Pursh Fl 2:740. Rocky mts.
- A. LEUCANTHUS** P 3:211, based on *Astragalus leucanthus* Pall, Ast 59 t 47 (1800). NW Am; Asia.
- A. MERTENSIANUS** P 3:211, based on *Oxytropis Mertensiana* Turcz Mosc b 1840, 68; Bunge Oxytr 116; G 20:4. Behring sea, etc.
- A. MONTANUS** P 3:210, based on *Astragalus montanus* L, sp pl 760. Eu.
- A. MONTICOLA** P 3:212, based on *Oxytropis monticola* G 20:6. Wyo, Brit Am.
- A. NANUS** P 3:212, based on *Oxytropis nanus* Nutt, T & G Fl 1:340. Wyo. Mont.
- A. PARRYI** P 3:211, based on *Oxytropis Parryi* G 20:4. Rocky mts.
- A. RICHARDSONII** P 4:69, based on *Oxytropis splendens* var. *Richardsonii* Hook Fl 1:148.
- A. SERICEUS** P 3:212, based on *Oxytropis sericea* Nutt, T & G Fl 1:339. Colo. Wyo.
- A. SONGARICUS** P 3:211, based on *Astragalus songaricus* Pall Astr 63 t 51. Eu.
- A. SPLENDENS** P 3:211, based on *Oxytropis splendens* Dougl, Hook Fl 1:147. NA.
- A. URALENSIS** P 3:210, based on *Astragalus uralensis* L sp 761. Eu.
- A. VERTICILLARIS** P 3:211, based on *Astragalus verticillaris* L, Mont 275 (1771). Eu.
- A. VISCIDUS** P 3:211, based on *Oxytropis viscida* Nutt, T & G Fl 1:341; G 20:4. Rocky mts.
- ARALIA** L Syst ed 1 (1735). A 1:330 d.
- A. CALIFORNICA** Wat, Am ac pr 11:144. A 1:380 d. Par 77. Ab 275. Da 7. B 1:273, 2:452.
- A. HUMILIS** Cav Ic 4:7 t 313. NM. B 1:273.
- A. JAPONICA** K, Pac Rural Press (7 Jc 1879). Cur 1:138. Japan. ?
- A. SCOPULORUM** Br 2:165 t 8, Com-
ondu, Baja.
- A. SPINOSA** L, sp pl 273. B 1:273.
- Genus ARBUTUS Tournefort.**
- L, syst ed 1 (1735).
- Trees with thick evergreen alt lvs: fls w in a terminal panicle: cx sm, 5-lobed: cor urn-shaped, with 5 recurved teeth and large honey glands near base: sta 10; anth flattened, with a pair of horns on back below summit: ova raised on a disk, 5-celled: fr, when ripe, a round red berry with a rough surface, edible, rather dry.
- A. LAURIFOLIA** Lindl, bot reg 25 t 67. B 1:452, as a sm-leaved Mexican form of *Menziesii*.
- A. MENZIESII** Pursh, Fl 1:282. Par 38. Da 10. B 1:452. Z 2:256. Parish, Z 1:31 (mentions *Rhytisma arbuti* on its lvs); 5:74, Monica. Ab 296. Puget Sound. Madronyo.
- A. PROCERA** Dougl ex Lindl bot reg t 1753. B 1:452 as *Menziesii*.
- A. PUNGENS** H & A bot Beech 144. B 1:453 as *Arctostaphylos pungens* (= *A. Hookeri* fide IK).

Genus **ARCEUTHOBIUM** Bieb.

Bieb Fl Taur Cauc suppl 629 (1819). (Razoumowskia Hoffm.)

- A. **ABIETINUM** E. Am ac pr 8:401. B 2:107 as occidentale var. abietinum.
A. **AMERICANUM** Nutt, G. Bost J 6:214. B 2:106. = A. oxycedri fide IK.
A. **CAMPYLOPODUM** G. Bost J 6:214. B 2:107 refers var (E, Pl Lindh 114) to A. divaricatum E.
A. **DIVARICATUM** E, Wheeler R 6:253. B 2:107.

ARCEUTHOBIUM DOUGLASII Engelm. E, Wheeler R 6:253. B 2:106. Z 2:233.

ARCEUTHOBIUM OCCIDENTALE E. E, B 2:107. Ab 110 as Razoumowskia occidentale. Ha 72.

A. **OXYCEDRI** Bieb Fl Taur Cauc Sup 629. Eu. B 2:106.

A. **FUSILLUM** Peck. B 2:106. Adirondacs.

A. **ROBUSTUM** E, Pl Fendl 59. B 2:107.
A. **VAGINATUM** J Presl, Rostl 2:28. B 2:107.

A. **VERTICILLIFLORUM** E, B 2:107. Sierra Madre, Mex.

ARCTERANTHIX Greene.

A. **COOLEYAE** P 3:190, based on Ranunculus Cooleyae Rose CNH 1:289 tr 22. **ARCTIODRACON** G. Am ac mem sr 2, 6:408. = Lysichiton fide IK.

A. **CAMTSCHATICUM** G above 409. B 2:187 as Lysichiton Kamtschatcensis.

AECTOMECON T & Fre in Frem R 312 t 2 (1845).

A. **CALIFORNICUM** T & F. B 1:21.

Genus **ARCTOSTAPHYLOS** Adanson.

Fam 2:165 (1763). A 1:245 d.

A. **ACUTA** Nutt, Am phil sc tr sr 2, 8:258. B 1:453 as A. pumila.

A. **ALPINA** Spreng, syst 2:287. Arctous alpina Nied, Engl Johr 1889. Mairania alpina Desv fide Parry, Cal ac b 2:498. Z 1:30.

A. **ARGUTA** Zucc in Linnaea 12: (1833) Litt 86. A 1:104 n. Mex.

Variety **DIVERSIFOLIA** Parry, Dav ac pr 4:35. A 1:104 fdr.

ARCTOSTAPHYLOS ANDERSONII A. Gray. G 11:83. B 1:452. Parry, Cal ac b 2:490. Cruz mts.

A. **BICOLOR** G 7:366. B 1:454. Ab 298. Br Z 1:112. Cat. P 1:205, Cedros. Par 14. A 1:106 d.

A. **CALIFORNICA** Hort Edinb; Gard 15:105? B 2:461 as A. Nevadensis.

A. **CLEVELANDI** G 12:61. B 2:461.

A. **CORDIFOLIA** Lindl bot reg sub t 1791. B 1:453.

A. **DIVERSIFOLIA** Parry, ex G, Syn Fl 2 (1):397. Br 1:214, Rosa. Z 1:114, Cat. A. **ELEGANS** Jepson. Er 1:15.

"A shrub 10 or 12' hi: lvs bright g. glab obovate and elliptic, acute or obtuse, 1-1½" lg, both surfaces somewhat rugulose, petioles 3" lg: infd glab, the rachis dilated upward, pedicels 3-5" lg, bracts deltoid-ovate 1-1½" lg, the upper portion jointed and decid: fls unknown; fr depressed-globose, more or less umbilicate, 4" hi, 6" broad, of variously angular rather than orbicular outline viewed from above, 2 or 3 of the 5 or 7 drupelets consolidated. Covering the undulating obsidian slopes south of Uncle Sam mountain, 29 J1 1892.

Nearly all my specimens show lvs with dark p veins and reticulations."—Er 1:15.

=A. manzanita.

A. **GLANDULOSA** Eastwood. Ab 298 as A. tomentosa.

A. **GLAUCA** Lindl bot reg sub t 1791. Parry, Dav ac pr 4:34; Cal ac b 2:495. Par 14. Ab 298. Cov 145. Da 10. B 1:454.

A. **GLAUCA** Wat, bot king 210. B 1:453 as A. pungens (=A. manzanita).

A. **HOOKEI** G Don, Gen Syst 3:836. B 1:453. 2:461. Parry, Cal ac b 2:490.

A. **INSULARIS** Greene, in Parry, Cal ac b 2:494. Z 1:141 as A. pungens (Rosa, Cat). Cruz, Greene, Cal ac b 2:406 (sub A. pungens).

A. **MANZANITA** Parry, Cal ac b 2:491 (19 ag 1887). Ha 100. A 1:365. Ab 297. Par 12 t. (A. pungens of various authors—not HBK).

A. **MYRTIFOLIA** Parry, P 1:34, Ione, Cal. Z 2:77.

A. **NEVADENSIS** G, Syn Fl 2 (1):27. B 2:461. Parry, Cal ac b 2:490.

A. **NUMMULARIA** G 7:366. B 1:453. Z 2:77. Par 15.

A. **OPPOSITIFOLIA** Parry. Dav ac pr 4:37. A 1:103 fdr.

A. **PARRYANA** Lemmon, P 2:68 (1890). A 1:105 fdr. Cov 145.

ARCTOSTAPHYLOS PATULA Greene. P 2:121. Ha 101. Ab 297. A 1:245 d.

A. **POLIFOLIA** HBK Nov Gen 3:277 t 258. Mex. (of B 1:454 =A. diversifolia Parry).

A. **PRINGLEI** Parry, Cal ac b 2:494. A 1:105 fdr. Ab 298.

Variety **DEUPACEA** Parry, Cal ac b 2:495. Ha 101. A 1:105 fdr.

A. **PUMILA** Nutt, Am phil sc tr sr 2, 8:266. B 1:453. Z 2:4. Parry, Cal ac b 2:489.

A. **PUNGENS** HBK, Gen sp 3:278 (1818).

Type locality: "in Regno Mexicano, locis alsis, juxta Moran et Villalpando, alt 1300-1400 hex."

The following refer to A. Manzanita: Da 10. Cov 146, Ut, Nev. B 1:453. 2:461. Greene, Cal ac b 2:406, Cruz. Br 1:214 Rosa (cites A. insularis as a synonym).

A. **TOMENTOSA** Dougl, bot reg t 1791. Da 10. Ab 297. B 1:452. Greene, Cal ac b 2:406, Cruz. Ha 101. Br 1:214, Rosa. Parry, Cal ac b 2:490.

A. **STANFORDIANA** Parry, Cal ac b 2:493. Calistoga, Cal.

A. **UVA-URSI** Spreng, Syst 2:287. B 1:453. 2:460. Cockerell W 6:11. Parry, pl Wyo 10; Cal ac b 2:489.

Variety **ALBA** Cockerell, W 6:11.

A. **VEATCHII** K 2:19. Curran, Cal ac b 1:141 as A. bicolor.

A. **VISCIDA** Parry, Cal ac b 2:492. Ore to Central Cal.

ARCTOUS Nied.

A. **ALPINA** Nied, Z 1:30. Mairania alpina Desv fide Parry.

ARCYRIA

A. **PUNICEA** Pers. M 1:18. Porto Rico.

ARENARIA L, Syst ed 1 (1735). A 1:162 d.

ARENARIA ALSINOIDES Wld.

Schlecht in Ges Nat fr Berl mag 7:201 (1813). A 1:24 d. =A. lanuginosa fide IK.

A. ARCTICA Stev, ex DC Prodr 1:404. Parry, Wyo 11, 14.
A. BREVIFOLIA Nutt, T & G Fl 1:180. Variety CALIFORNICA G, Cal ac pr 3: 101. B 1:69 as A. Californica Brewer.
A. CALIFORNICA Brewer, B 1:69. 2:435.
A. CAPILLARIS Polr Enc 6:380. Sib. B 1:69.
A. CONGESTA Nutt, T & G Fl 1:178. Parry, Wyo 6. Z 2:161. B 1:69.
ARENARIA DOUGLASII T. & G. Fl 1:674. A 1:25d. B 1:69. Br 1:202. Cruz; Z 1:113. Cat. Ha 78. Ab 147. Da 3, Baja!
A. FENDLERI G, Pl Fendl 13. A 1:162 d. Ab 147. B 1:69.
A. FORMOSA Fisch ex DC Prodr 1:402. A. FORMOSA T, bot Wilkes 243. Wat, bot king 39. B 1:69, as A. capillaris.
A. FRANKLINII Dougl ex Hook Fl 1: 101. B 1:69.
A. LATERIFLORA L, sp pl 423. Sib. B 1:70.
ARENARIA MACRADENIA Watson. Wat 17:367. A 1:24d.
 Variety PARISHIORUM Robinson. A 1:24 fdr.
ARENARIA MACROPHYLLA Hook. Fl 1:102. Asia. B 1:70. A 1:24d. Cuyamaca!
 ARENARIA MARITIMA Nutt.
 A. NARDIFOLIA Ledeb ex Hook Fl 1:98. B 1:69 as A. capillaris.
 ARENARI PALUDICOLA Robinson. A 1:25 fdr. Ab 147.
 SBar to Magdalena bay, Baja.
 ARENARIA PALUSTRIS Watson. Wat B 1:70. Z 2:341. A 1:25 et Ab 148 as A. paludicola.
 SBar (Parish 941).
A. FUNGENS Nutt, T & G Fl 1:179. B 1:69. Z 2:161. Parry, Wyo 13 (var.).
ARENARIA SAXOSA A. Gray. Pl Wright 2:18. Br, Colo 228, 223 (Colo; NM). A 1:25d.
A. TENELLA Nutt, T & G Fl 1:179. B 1:69. Ore; Wash.
A. VERNA L, Mant 72. Eu. B 2:435. Eu. Asia, Colo, Ut.
 Variety HIRTA Watson, B 2:435, "Shortly hirsute throat;" Lassens Peak.
ARGEMONE L, syst ed 1 (1735). A 1: 97 d.
A. BIFINNATIFIDA P 3:346.
 A. CALIFORNICA Hort. A 1:97 as A. hispida.
 A. CORYMBOSA Greene, Cal ac b 2:59. A 1:97 as A. hispida.
A. GRACILENTA P 3:346.
 A. HISPIDA G, Pl Fendl 5. B 1:21. Z 2: 227. Da 2. A 1:97 as A. platyceras var. hispida.
A. LEIOCARPA P 3:345.
A. MEXICANA L, sp pl 508. A 1:97 d. Variety HISPIDA T, bot Mex bound 31. B 1:21 as A. hispida.
 A. MUNITA Durand & Hilg, Pac Ry R 5:5 t 1. B 1:21 as A. hispida.
A. PLATYCEBAS L & O, Ic 2:43. Mex. Par 72. Z 2:227. P 4:68. A 1:97. Ha 81.
 Variety HISPIDA Prain. A 1:97 d. Ab 162. Eastwood, Er 4:95.
A. SANGUINEA P 4:68.
A. SQUARROSA P 4:68.

Genus ARGENTINA Lam.

Lam, Fl Fr 3:118 (1778). =Potentilla

fide IK. A 1:318 d.

ARGENTINA ANSERINA Rydb.

Ab 199. A 1:318 d.

Abrams, Fl LA 199.—"Rather common in damp ground in the valleys. Flowering through the summer."

Potentilla Anserina L.

Cockerell, W Am Sci 5:11.

Brewer & Watson, bot Cal 1:180.

Parsons, W Fls Cal 179.

Genus ARGYTHAMNIA P. Browne.

Swz, Prodr 39 (1788).

A. BRANDEGEI Millsp, Cal ac pr sr 2, 2:220. Baja.

ARGYTHAMNIA SERICOPHYLLA A. G. G, B 2:70, 482.

Variety VERBUCESEMINA Millsp, Cal ac pr sr 2, 2:221. Baja.

ARGYTHAMNIA SERRATA Mull.

Mull, Arg Linnæa 34:147. B 2:69.

Variety MAGDALENÆ Millsp, Cal ac pr, sr 2, 2:221. Magdalena Island.

ABISTOLOCHIA L, syst ed 1 (1735).

A. CALIFORNICA T, Pac Ry R 4:128. B 2:102. Z 2:158, 374. Par 380 t.

ARMENIACA Mill, Gard Dict ed 6 (1752). =Prunus fide IK.

A. VULGARIS Lam Enc 1:2. Parish Er 1:46 ("nature of the petiolar glands in A. V").

ARMERIA L, syst ed 1 (1735).

A. ANDINA Poepp, DC Prodr 12:682. Chill. Variety CALIFORNICA Bois, DC Prodr 12:682. B 1:465 as A. vulgaris.

A. ELONGATA Hoffm, Deutsch, Fl 1: 150. Eu.

A. VULGARIS Willd, En Hort Berol 333. B 1:465. =A. elongata fide IK.

ARNICA L, syst ed 1 (1735).

A. ALPINA Olin & Ladau, Diss 11. B 1:416. P 4:167. Parry, Wyo 23.

A. AMPLEXICAULIS Nutt, Am phil sc tr ns 7:408 (1841). B 2:458.

A. ANGUSTIFOLIA G, Am J sci. Sr 2, 33:238 =Parryi.

A. ANGUSTIFOLIA Vahl, Fl Dan t 1524. B 1:416 as A. alpina Murr.

A. ARNOGLOSSA P 4:166.

A. ATTENUATA P 4:170.

ARNICA BERNARDINA Greene.

P 4:170. A 1:63 fdr.

A. BETONICAEFOLIA P 4:163.

A. CHAMISSONIS Less in Linnaea 6: 238. Parry, Wyo 23, 24. B 1:416.

A. CHAMISSONIS T & G, Fl in part = A. foliosa fide B 1:416.

A. CHIONOPHILA P 4:171.

A. COLUMBIANA P 4:159.

A. CORDIFOLIA Hook Fl 1:331. B 1: 415.

A. CROCEA P 4:159.

A. DENUDATA P 3:105.

A. DISCOIDES Benth Pl Hartw 319. B 1:415.

A. DIVERSEFOLIA P 4:171.

A. FOLIOSA Nutt, Am Phil sc pr, ns, 7:407. B 1:416.

A. FULGENS Pursh, Fl 2:527. B 1:416 as alpina. P 4:36, 37.

A. GRANDIFOLIA P 4:172.

A. GRAYI M 1:5 based on A. cordifolia var. eradiata G, Syn Fl 1 (2):381

1878 (not of 1863).

A. INCANA P 4:169.

A. LATIFOLIA Bong Veg Sitch 29. B 1:415. 2:458. P 4:37.

A. LESSINGE P 4:167.

- A. LONCHOPOYLLA** P 4:164.
A. LONGIFOLIA Eaton, bot King 186. B 1:416.
A. MACILENTA P 4:161.
A. MACOUNII P 4:160.
A. MENZIESII Hook Fl 1:331. B 1:415 as *A. latifolia*.
A. MOLLIS Hook Fl 1:331. B 1:415 = *A. chamissonis* fide IK. Parry, Wyo 23.
A. MONTANA L, sp pl 884. B 1:416 (of Hooker in part as *A. foliosa*).
A. PARVIFLORA G 7:363. B 1:415.
A. PLANTAGINEA Pursh Fl 2:527. B 1:416 as *alpina*.
A. VISCOSA G 13:374. B 2:458.
A. MEEBII P 4:36.
A. MULTIFLORA P 4:162.
A. OVALIFOLIA P 4:168.
A. OVATA P 4:161.
A. RIVULARIS P 4:163.
A. BYDDEEGII P 4:36.
A. SPATHULATA P 3:103.
A. SCABERRIMA P 4:165.
A. SONNEI P 3:104.
A. SUBCORDATA P 4:173.
A. SUBPLUMOSA P 3:104.
A. TENORIIFOLIA P 4:164.
A. TOMENTELLA P 4:165.
A. TOMENTOSA P 4:168.
A. VENTORUM P 4:173.
ARNICA SCABERRIMA Greene. P 4:165. A 1:63 fdr.
ARNOGLOSSUM S F Gray Nat Arr Britt Pl 2:292 (1821). = *Plantago* fide IK.
ARNOGLOSSUM Raf. Fl Lud 64 (1817).
A. PLANTAGINEUM Raf. P 3:183 as *Mesadenia plantaginea* Raf.
AROMIA Nutt. Am Phil sc tr sr 2, 7:395 (1841).
A. TENUNFOLIA Nutt, 396. B 1:385 as *Amblyopappus pusillus*.
ARONIA Pers Syn 2:39.
A. ALNIFOLIA Nutt Gen 1:306. B 1:190 as *Amelanchier alnifolia*.
ARRACACIA Bancr in Jam J 4:18 (1826).
A. ARGUTA B & H. A 1:271 as *Velaea arguta*.
A. VESTITA Wat. A 1:271 as *Velaea vestita*.
AREHENANTHERUM Beauv Agrost 55 t 11 f 5 (1812).
A. AVENACEUM Beau Agrost 55 t 11 f 5. Eu. B 2:298.
- Genus ARTEMISIA Linnaeus.**
L. syst ed 1 (1735).
A. ABROTANOIDES Nutt, Am Phil sc tr sr 2, 7:399. B 1:403 as *A. californica*.
A. ARBUSCULA Nutt, Am Phil sc tr sr 2, 7:398. B 1:405.
A. ARCTICA Less in Linnaea 6:213. B 1:403 as *A. Norvegica*.
ARTEMISIA BIENNIS Willd.
Willd Phyt 11 n 39. Sib. Da 10. Z 1:303. A 1:249 d.
Abrams, Fl LA 437. LA.
ARTEMISIA CALIFORNICA Less.
Less, Linnaea 6:523 (1831).
Coville, CNH 4:137. Sber mts.
Greene, Cal ac b 2:404. Cruz. Br 1:213, Rosa. Par 383. P 1:90 Mig; 205, Cedros. Da 10. B 1:403. Ab 437. A 1:249d.
Type locality: "in California," near SF.
S F; Las Huevitas, Baja (Br); Guad; Rosa; Cruz.
A. CANA Pursh Fl 621. B 1:405.
A. CHAMISSONIANA Besser in Hook Fl 1:324. B 1:403 as *A. Norvegica*.
A. DISCOLOR Dougl, DC Prod 6:109. B 1:404.
ARTEMISIA DRACUNCULOIDES Psh.
Pursh, Fl 742 (1814).
B 1:404, 2:458. Da 10. Ab 437. Z 2:377, 361. A 1:249 d. Ha 124.
Coville, CNH 4:137.
Type locality: "in Upper Louisiana."
ARTEMISIA HETEROPHYLLA Nutt.
Am Phil sc tr n s, 7:100. A 1:249 d. Ab 437. Ha 124. B 1:404 as *A. vulgaris* var. *Californica* Besser.
A. FISCHERIANA Bess, Mosc sc nat mem 3:21. = *A. Californica* fide B 1:403.
A. FOLIOSA Nutt. Am phil sc tr sr 2, 7:307. = *A. Californica* fide B 1:403.
ARTEMISIA LUDOVICIANA Nutt.
T & G Fl 2:420. Greene Cal ac b 2:404 Cruz. Br 1:213 Rosa. B 1:404. A 1:250 d.
Eastwood, Erythea 4:32. 'near SF.'
Coville, CNH 4:137.
Bingham says this is "recommended for the effects of poison oak."
British Columbia to San Pablo, Baja (Br); Rosa; Cruz.
A. MATRICARIOIDES Less in Linnaea 6:210. = *Matricaria discoidea* fide B 1:401.
A. MONOCEPHALA M 1:118.
A. NORVEGICA Fries, Nov Suec ed 1, 56 (1817). B 1:403.
A. PACHYSTACHYA DC Prodr 6:114. = *pycnocephala* fide B 1:404.
ARTEMISIA PALMERI A. Gray.
G 11:79. B 1:618. A 1:250 d.
Jamul valley. SD Co (Palmer); Baja.
ARTEMISIA PARISHII A. Gray.
G 17:220. Da 10. A 1:250 d.
Parish, Zoe 5:120. "Cajon Pass is error, only at Newhall."
Interior of LA Co (Parish). Baja.
A. PATTERSONI M 1:118 s.
A. POTENTILLOIDES G 6:551. = *Tanacetum* p. M 1:7. B 1:402.
A. PYCNOCEPHALA DC 6:99. Sib. B 1:404.
A. ROTHROCKII G, B 1:618.
A. RUPESTRIS L sp pl 847. (Fl Dan t 801 = *A. Norvegica* fide B 1:403).
A. SPINESCENS Eaton, bot King 180 t 19. B 1:404.
ARTEMISIA TRIDENTATA Nutt.
Am phil sc tr sr 2, 7:398. Da 10. B 1:405. Z 2:102. A 1:250 d. Par 384. Br, Colo 229. Ha 124. Cov 138.
Variety **ANGUSTIFOLIA** G 19:49. A 1:251 d.
ARTEMISIA TRIFIDA Nutt.
Am Phil sc tr sr 2, 7:398. B 1:405. Da 10.
ARTEMISIA VULGARIS Linn.
L, sp pl 848. B 1:403. Br Z 1:114 Cat. Par 383.
Variety *CALIFORNICA* Besser.
Da 10. Ab 437 as *A. heterophylla*. A 1:250 s.
ARTHROCNEUM Moq. Chen Enum 111.
A. AMBIGUUM Moq. 112. B 2:57 as *Salicornia ambigua*.
A. FRUTICOSUM Moq 111. = *Sali-*

cornia fruticosa.

Variety **CALIFORNICUM** Moq, DC 13 (2):151. B 2:57 as S. A.
Variety **AMBIGUA** G Man 410. B 2:57 as S. a.

A. **MACROSTACHYUM** Bunge, Salic 67. (Of T. bot Mex bound = *Salicornia occidentalis* fide B 2:58.)

ARUNCUS L, Syst ed 2 (1735).

A. **SYLVESTER** Kostel, Ind H Prag 15. = *Spiraea Aruncus*. B 2:443.

AEUNDO L, Gen ed 1, 19 (1737).

A. **CANADENSIS** Mich. Fl 1:73. B 2:279 as *Calamagrostis canadensis* Beauv.

A. **DONAX** L, sp pl 81. Z 2:26. Ab 44. Da 19; Er 1:101.

Giant-reed. A tall reed-like grass with hollow cu, broad flat lvs and ample terminal panicles. Introduced from southern Eu and cult for ornament, sometimes found as an escape.

A. **PHRAGMITES** L, sp pl 81. = *Phragmites communis* Trin fide B 2:300.

ASAGRAEA Baill, *Adansonia* 9:232 (1870).

A. **SPINOSA** Baill 232. A 1:379, et B 1:143, as *Dalea spinosa*.

ASARUM L, Syst ed 1 (1735).

A. **CAUDATUM** Lindl, bot reg sub t 1399. B 2:102. Par 316 t.

A. **HAETWEGI** Wat 10:346 (1875). B 2:101. Par 318. Z 2:166.

A. **HOOKERI** Field & Gardn, Sert t 32. = A. *caudatum* fide B 2:102.

A. **LEMMONTI** Wat 14:294 (1879). B 2:102.

Genus **ASCLEPIAS** Linnaeus.

L, Gen ed 1, 64 (1737). A 1:200 d.

A. **ACORNUM** K 1:54. = *Gomphocarpus cordifolius* Benth fide Cur 1:142.

ASCLEPIAS ALBICANS S. Watson.

A. **ARENICOLA** Nash, Torr cl b 23:252. P 3:235 as *Oxypteryx arenicola*.

A. **BRACHYSTEPHANA** E, bot Mex bound 163. Z 2:249.

A. **CALIFORNICA** Greene, Er 1:92. Ha 103; bot gaz 31:389. *Gomphocarpus tomentosus* G.

A. **CRYPTOCERAS** Wat, bot king 283 t 28. B 1:476. Z 2:232.

A. **DOUGLASII** Hook Fl 2:53 t 97. = *speciosa* fide B 1:475.

A. **ECORNUM** K ex G Syn Fl 2(1):100. = *Gomphocarpus cordifolius* fide B 1:477.

ASCLEPIAS ERIOCARPA Benth.

Pl Hartw 323. A 1:200 d. Ha 103. Baja! Da 11. Ab 307. B 1:476, 620. CT. Pac Ry R 4:128 = A. *vestita* fide B 1:476).

Coville, CNH 4:149.

Abrams, Fl LA 307.—"Frequent on dry mesas and in the foothills, also occasionally in the pine belt of the San Gabriel mts."

Type locality: "in collibus siccis juxta praedium Tulareitos in vicinibus Monterey, Cal."

ASCLEPIAS EROSA Torr.

T, bot Mex bound 162. Cov 149. Baja mts! B 2:463.

Variety **MOHAVENSIS** Cajon Pass, Sber!

A. **FASCICULARIS** Decne, DC 8:509. =

A. *Mexicana*. A 1:201 s. B 1:475, 2:463. Da 11.

A. **FREMONTI** T, Pac Ry R 6:87. B 2:463.

A. **JAMESII** T, bot Mex bound 162. Greene. Er 1:22.

A. **LEUCOPHYLLA** E, Am nat 9:348 (1875). B 1:476, 620. 2:463.

A. **LINDHEIMERI** E, Pl Lindh 250. = *longicornu*. P 3:236 as *Podostemma* L.

A. **LONGICORNIS** K 1:65. = A. *speciosa* T fide Cur 1:142.

A. **LONGICORNUM** Benth, Pl Hartw 24. P 3:236 as *Podostemma* 1.

A. **MACROPHYLLA** Nutt, Gam 180. = A. *Mexicana*. B 1:476.

ASCLEPIAS MEXICANA Cav.

Ic 1:42 t 58. Par 316 t. A 201 d. B 2:463. Ab 307.

Abrams, Pl LA 307.—Frequent on the mesas and in the foothills.

Cav. Ic Pl 1:42 (1791).

Type locality: "prope Mexico."

Coville, CNH 4:149.

Hall, U 103.

Asclepias fascicularis Decaisne, of Bot Cal.

Ha U 103. Oregon to Baja! Nevada.

A. **NYCTAGINIFOLIA** G 12:69. B 2:463. P 3:237 as *Podostemma* n.

A. **PEDICELLATA** Walt Fl Carol 106. = *Podostigma pubescens*. P 3:207 s.

A. **SPECIOSA** T, Ann Lyc NY 2:218 (1828). Par 318. Greene Er 1:22. Cov 149. B 1:475. Z 2:165.

A. **STENOPHYLLA** G 12:72. Z 2:249.

ASCLEPIAS SUBULATA Decsne.

DC 8:571. "Jumete," a powerful poison. B 1:475.

A. **SYRIACA** L, sp pl ed 2, 214. Greene, Er 1:22.

ASCLEPIAS VESTITA H. & A.

H & A, bot Beech 363. B 1:476.

A. **VRIDIS** Walt, Fl Carol 107. = *Asclepiodora viridis*. P 3:207 s.

A. **WRIGHTII** G 16:102. = A. *nyctaginifolia*. P 3:236 as *Podostemma* Lindheimeri.

ASCOMYGES.

A. **DEFORMANS** Harkness, Z 1:87 (fungus noted on *Aesculus Californicus*, etc.).

ASPARAGUS L, Syst ed 1 (1735).

A. **OFFICINALIS** L, sp pl 313. Eu. Sib. Ab 92.

Genus **ASPIDIUM** Swartz.

ASPIDIUM ARGUTUM Eaton.

A. **FILIX-MAS** Br, Colo 228.

Enum 326. Da 20. Greene Cal ac b 2:415, Cruz.

ASPIDIUM MUNITUM Kaulf.

A. **RIGIDUM**

Variety **ARGUTUM**. Da 20.

Genus **ASPLENIUM** Linnaeus.

A. **BLEPHARODES**. Z 1:197.

ASPLENIUM FILIX-FOEMINA Bernh.

Z 1:293. B 2: 4, 5, 129, 389, 344.

ASPLENIUM TRICHOMANES Linn.

B 2:344.

ASPLENIUM VESPERTINUM Maxon.

Maxon, Torr cl b 27:197 (1900).

Southern and Baja Cal. Formerly referred to *A. trichomanes incisum*.

Feather fern.

ASTEPHANUS UTAHENSIS Engelm.**Genus ASTER** Linnaeus.

L, Syst ed 1 (1735).

Leafy stemmed autumnal per or rarely an herbs with alt lvs and panicled or somewhat corymbose hds. Inv hemispheric to campanulate, its bracts imbricated in several sr, tips herbaceous. Ray fls many, com bluish or pinkish, pist. Disk fls perfect, y changing to red-p; cor-tube slender; limb funnelform. Sty-branches flattened, their appendages subulate, lanceolate or ovate, acute, pap bristles slender, num, scabrous, com in 1 sr, dull w

ASTER ADSCENDENS Lindl.
Lindl, DC 5:231. B 1:324. McClatchie, Er 2:125 (Mt Lowe, LA Co). Sber (Parish 180).

A. ADSURGENS P 4:216.

A. AESTIVUS G, Man ed 5:233. B 1:614.

A. ALPIGENUS G 8:389. = *A. pulchellus*. B 1:325. P 3:147. 4:224 as *Oreostemma a.*

A. AMYDALINUS Lam Encyc 1:305. = *A. umbellatus*. P 3:52 as *Doellingeria amygdalina*.

ASTER ANDERSONI A. Gray.

G 7:352. Ha 125, Jac, thruout the Sierra Nevada. Cov 125. P 3:147 as *Oreastrum Andersonii*. P 4:224 as *Oreostemma Andersonii*. B 1:325, 2:455. *Erigeron Andersonii* G.

Type localities: "Nev, near Carson City," and "Lake Tenaga, in the Sierra Nevada."

A. ARMERIAEFOLIUS P 4:214.

A. ASOE A 1:195 s.

A. ANGUSTUS T & G Fl 2:162. B 1:326 s.

A. BIENNIS Nutt Gen 2:155. = *A. canescens*. B 1:322 s.

A. BIGELOVITZ G, Pac Ry R 4:97 t 10. P 3:63 as *Machaeranthera B. NM.*

A. BLOOMERI G 6:539. = *campestris*. B 1:323.

A. BOLTONIAE. P 3:248.

A. BRICKELLOIDES. P 2:16 based on *Sericocarpus tomentellus*. P 1:283: 3:55 as *Eucephalus tomentellus* (excl var. *glabratus*).

A. CALIFORNICUS Less in Linnaea 6:33. = *Erigeron glaucus*. B 1:331 s.

ASTER CANESCENS Pursh.

Fl 2:547. B 1:322. P 3:59 as *Machaeranthera c. Baja!* CD! Brit Col. Cal, Ar, British Columbia; Baja! CD!

Variety *TEPHRODES* A. Gray.

Aster incanus A. Gray, Bot Cal 1:322. So Cal; Arizona; N M.

ASTER CHAMISSONIS A. Gray.

G. Wilkes exp 341. Par 338 t. Da 8. B 1:324. Z 2:359.

L A (Parish 564); Oregon.

A. CHILENSIS Nees, Gen et Sp Aster 123. = *Chamissonis*. B 1:324 s.

A. CONSPICUUS Lindl, DC 5:230. Parry, Wyo 18. B 1:323.

A. COMMUTATUS. P 4:217.

A. DIVARICATUS T & G Fl 2:163. = *A. DIVERICATUS* T & G Fl 2:163. = *exilis*. (Spreng, syst 3:529 = *umbellatus*) B 1:325: 2:455.

A. DICTIOCHOPHYLLUS P 4:213.

A. ELEGANS T & G Fl 2:159. P 3:54 as *Eucephalus elegans* Nutt.

A. DOUGLASII Lindl, DC 5:239. B 1:324 2:614s.

A. DURANDII Nutt (Pac Ry R 5:8). A 1:195 s. = *Menziesii* fide IK B 1:234 s.

ASTER ENSATUS Greene.

P 4:223. A 1:58 fdr.

ASTER EXILIS Linn.

Ell sketch 2:344. Da 8 Ab 402.

St erect, 6-12 dm hi, rather stout below, paniculately branched above into num slender branches; lower lvs lanceolate, the upper linear, mostly entire; hds sm, num, about 6 mm hi, nar; bracts of the inv linear-subulate; rays 15-40, bluish-p or pinkish. CD! Tex.

A. EXSUL Lindl Swan inv pl app 24. P 4:221. = *Olearia rudis* fide IK.

A. FILAGINIFOLIUS H & A bot Beech 146. = *Corethrogyne filaginifolia*. B 1:321.

ASTER FOLIACEUS Lindl.

DC 5:228. Br 1:212 Rosa. P 3:81. Z 1:138. Alk.

ASTER FREMONTII A. Gray.

G, Syn Fl 1 (2):191. (*A. adscendens* var. *Fremontii* T & G Fl 2:503).

Variety *PARISHII* A. Gray.

G, Syn Fl 1 (2):192. — "A dubius form (connecting with *A. occidentalis* Nutt?), with more imbricated and acute inv bracts, their margins ciliolate." Bear (Parish). Ha 125. McClatchie, Er 2:125, *Gabriel* mts.

Bear (Parish). Syn Fl 1:192.

A. FRONDOSUS T & G Fl 2:165. B 1:326 s.

A. FRUTESCENS Wat 24:55. P 3:48 as *Xylorrhiza frutescens*. Baja.

A. FULCEATUS P 4:217.

A. GLAUCUS T & G Fl 2:159. P 3:56 parte = *adscendens* fide IK. B 1:324.

A. GLUTINOSUS Cav Ic 2:53. B 1:303 s.

A. GLABRIUSCULUS T & G Fl 2:159. P 3:47 as *Xylorrhiza glabriuscula* Nutt.

A. GLASTIFOLIUS P 4:218.

A. GLANCUS T & G Fl 2:159. P 3:56 as *Eucephalus glaucus* Nutt.

ASTER GREATAE Parrish.

A 1:196 d. Ab 402.

A. GRINDELOIDES. A 1:194 s.

A. HAYDENI Porter, Hayd Geol R 1871, 485. P 4:224 as *Oreostemma H.* = *pulchellus* fide IK.

ASTER HESPERIUS A. Gray.

A 1:196 d. Da 8. Ab 402. P 4:224.

A. INCANUS G. B 1:322. P 3:62 s.

A. INFIRMUS Michx Fl 2:109 (1803). P 3:52 as *Doellingeria infirma*.

A. INTEGRIFOLIUS Nutt. Parry, Wyo 18. B 1:324.

A. LAEVIS L. sp pl 876.

Variety **SIMPLEX** Cockerell W 6:10.

A. LAXIFLORUS.

B 1:614 s.

A. LAETEVIRENS. P 4:219.

A. LIMONIIFOLIUS. P 4:222.

A. LIMOSUS. P 4:222.

A. MAJUSCULUS. P 4:215.

ASTER MENZIESII Lindl.

DC 5:243. P 4:223. A 1:196 d. Ab 401.

B 1:323.

A. NELSONII. P 4:219.

A. NEVINII.

A 1:195 s.

ASTER NODULINUS A. Gray.

Santa Cruz Island (Greene).

A. OREGANUS T & G Fl 2:163.

B 1:325 s.

A. ORCUTTII Rose, bot gaz 16:113 t 11 (1891). CD. A 1:58 fdr, s. P 3:48 as Xylorrhiza O.

A. OXYLEPIS. P 4:223.**A. PANICULATUS** Lam Encyc 1:306.**ASTER PARVIFLORUS** A. Gray.

P 4:224. B 1:322. P 3:59 as Machaeranthera parviflora.

Colorado Desert (Parish).

A. PARISHII.

A 1:195 s.

A. PITYPHYLLUS.

A 1:195 s.

A. FRATINCOLA. P 4:215.**A. PROXIMUS.** P 4:220.

A. ptarmicoides Z 1:62.

A. PULCHELLUS Eaton, bot king 143 t 16. Parry, Wyo, 17. B 1:325. P 4:224 as Oreastemma Haydeni.

A. RADULA Ait Hort Kew ed 1, 3:210.

B 1:323, 324 s.

A. RADULINUS G 8:388. Greene, Cal ac b 2:401. Cruz. B 1:323.

A. SALSUGINOSUS.

Par 338 s. B 1:325.

A. SHASTENSIS G, B 1:322, 2:455. P 3:61 as Machaeranthera S.**A. SPECTABILIS** Ait Hort Kew ed 1, 3:209. B 1:324 s.**ASTER SPINOSUS** Benth.

Bth 20. B 1:614. P 2:244 as Leucostyris spinosa.

So Cal; CD; Baja! Texas.

A. SPITHAMOEUS P 4:217.

A. TANACETIFOLIUS HBK, Nov Gen sp 4:95. B 1:322. P 3:58, S.

A. TENUE K 7:114, "is perhaps A. exilis" (Curran 1:139). B 2:455 S.

A. TOMENTELLUS H & A bot Beech 146.

B 1:321 S. Corethrogyne flaginifolia fide IK.

A. TORTIFOLIUS G 7:353.

B 1:323. P 3:48 S.

A. VALLICOLA P 4:221.**A. VENUSTUS.**

Z 2:247. M 1:8 s. P 3:47 s.

A. VIOLACEUS P 4:213.**A. WRIGHTII** G, Pl Wright 2:75.

B 1:323. Z 2:247. 230. P 3:47 s.

A. UMBELLATUS Mill Diet 1768? Ait Kew 3:199 (1789)? P 3:52 as Doellingeria umbellata.

A. XYLORHIZA T & G Fl 2:158. P 3:47 s. Xylorrhiza villosa Nutt, fide Parry. Pl Wyo 4.

A. CORNIFOLIUS Muhl in Willd Sp 3: 2039 (1803). P 3:63 as Doellingeria infirma.

A. ENGELMANNI G, Syn Fl 199 (1884). P 3:54 as Eucephalus E ("at least in large part").

A. ERYNGIIFOLIUS T & G Fl 2:506. P 3:49 as Heleastrum Chapmanii.

A. INORNATA Greene, Er 3:119 (1895). P 3:62 as Machaeranthera inornata.

A. LEUCANTHEMIFOLIUS Greene, Er 3:119. P 3:61 as Machaeranthera leucanthemifolia.

A. LINARIIFOLIUS L, sp pl 874 (1753). P 3:245 as Ionactis linariifolia. Wisc. Tex.

A. MOHAVENSIS Cov 126. P 3:48 as

Xylorrhiza tortifolia.

A. NEMORALIS Ait Kew 3:198 (1789). P 3:53, 57 as Eucephalus n. Newfoundland; N. J.

A. NERVOSUS Mill ? P 3:52 as Doellingeria umbellata.

A. OBOVATUS Ell Sk 2:368 (1824). P 3:53 as Doellingeria reticulata.

A. OXYPHYLLUS P 3:103. Colo.

A. PALUDOSUS Ait Kew 3:201 (1789). P 3:50 as Heleastrum paludosum DC 5: 264.

A. PARRYI G, Am nat 8:212 (1874). P 3: 47 as Xylorrhiza Parryi. Wyo. Ut.

A. PATTERSONII G 13:272 (1878). P 3: 63 as Machaeranthera P.

A. PAUCICAPITATUS Rob. Am ac pr 29:329. P 3:56 as Eucephalus p. Wash.

A. PTARMICOIDES P 3:53. Chrysopsis alba Nutt.

A. RETICULATUS Pursh Fl 2:548 (1814). P 3:53 as Doellingeria reticulata.

A. SCOPULORUM G 16:98 (1880). P 3:245 as Ionactis alpina.

A. SPINULOSUS Chapm Fl 199 (1860). P 3:50 as Heleastrum spinulosum. Fla.

A. STENAMERES G, 17:209 (1882). P 3:246 as Ionactis S.

Genus ASTRAGALUS Tournefort.

L, Gen ed 1, 215 (1737).

Ann or per herb or sometimes woody at base, with unequally pinnate lvs, persistent stipules, and rather sm fls arranged in axy spk or racemes: ex 5-toothed; pet with nar blade and slender claw: keel obtuse: sta diadelphous: stig terminal, minute: pod various, coriaceous and turgid, or thin and bladderly-inflated, 1-celled, or becoming 2-celled by intrusion of one or both sutures: sds few to many, sm, on slender funiculi. Rattle-weed, loco-weed.

A. ACUTIROSTRIS Wat 20:360.

"Ann, slender, resembling A. Nuttallianus: lfts 5 or 6 pairs, retuse, 2 or 3" lg: racemes much exceeding the lvs in fr: ex a line lg, the slender teeth about equalling the turbinate tube; cor w'ish, 2" lg, the keel with an acute oft ascending beak: pods (1-5) scattered on the rhachis, like those of A. Nuttallianus, but the ventral suture nearly straight, 8" lg. Near Brown's Ranch, Mohave Desert, by Parish Brothers, May, 1882, and on dry rocks above the Calico Mines, near Fort Mohave, by J. G. Lemmon, May, 1884. Closely allied to A. nothoxys. G but with much sm'er fls and ex."—Wat 20:360.

A. ALBENS Greene, Cal ac b 1:156.

"W thruout with a sh, appressed, silky pubescence: branches spreading, less than 1° lg, from a per rt: lfts in about 4 pairs, obovate, obtuse, 3-5" lg: raceme few-fld: pedicels very sh: ex-teeth subulate, equaling the tube: cor 4" lg, p: pod oblg, slightly compressed, falcate-incurved, silky pubescent. Mohave Desert, My, 1882, S. B and W. F. Parish, No. 1274. Perhaps nearest A. Cobrensis, but that is a green and glabrous, considerably sm'er plant with straight pods."—Greene, Cal ac b 1:156.

A. ALPINUS L, Sp Pl 1:760. Parry, Pl Wyo 14.

A. AMPULLARIUS Wat Am nat 7:300 (1873). B 1:149.

A. ANDERSONII G, 6:524. B 1:151.

A. ANEMOPHILUS Greene, Cal ac b 1:186. P 1:33; 2:24.

Synonyms: *Phaca vestita* Bth (fide P 1:33). *Phaca candidissima* Bth ("very probably" fide P 2:24). *Astragalus Miguelensis* P 1:33 (fide P 2:24). *A. candidissimus* Wat, bib ind 191 not of Ledebour, Fl Alt 3:309). *A. Magdalenae* P 1:162.

ASTRAGALUS ALBATUS Sheldon.

ASTRAGALUS ANTISELLI A. Gray.

G, B 1:152. Ab 222. Da 5, Cat. A 1: 379 d.

A. ARGILLOSUS Z 2:241.

A. ARIDUS G 6:223 (1864). B 1:147.

Silvery silky-pubescent, like *A. Coulteri*; lfts oblg, 3-4" lg; peduncles sh'er than lvs, spicately 5-8-fid; cor barely twice as lg as cx, hardly over 2" lg, y'ish-w; pod obliquely ovate, acute, inflated, of firm chartaceous texture, 1/2" lg, canescent, 1-celled. Between Rio Colorado and SD (Thurber).

A. ARRECTUS G 8:289. B 1:153 (Nev, Ut, Idaho).

A. ARTHU-SCHOTTII G 6:209. B 1: 147 as *A. Coulteri* Bth.

A. ASCLEPIADOIDES Z 2:238.

A. ATRATUS Wat, Bot King 69. B 1:155 (Nev.).

A. AUSTINAE G, B 1:156.

"Pod sessile in and sh'er than the ex, turgid-fis capitate. A span hi, in dense tufts, silvery silky-pubescent: stipules scarious and mostly united into one ovate body opp the lf: lfts 9-17, oblg or oval-lanceolate, acute or mucronate, 4 or 5" lg; peduncle (1' or 2' lg) mostly lg'er than lf, bearing 10 or 12 sessile fis in a close hd: bracts nearly filiform, persistent, nearly equaling the cx, both w-villous; the filiform teeth of the latter rather lg'er than the campanulate tube, and nearly equaling the (pale or w'ish) cor, of which the stand-pubescent: pod turgid-oval, chartaceous, hoary-pubescent, imperfectly 2-celled, few-seeded, only 2" lg, not equaling the cx and wings are externally villous-cx-teeth and the marcescent cor, the transverse section almost circular."— B 1:156.

Type locality: "Summit of Mount Stanford (Castle Peak), Nevada Co [Cal], at 9000 ft. Lemmon.

A. BICRISTATUS G 19:75. SBer mts.

A. BIGELOVII G, Pl Wright 2:42. Br. Colo 234.

A. BISULCATUS G, Pac Ry R 12:42 t 1. Br Colo 234. Z 2:240.

A. BEAUNTONII Ab 223. A 1:379 d.

A. BOLANDERI G 7:337. B 1:153.

A. BREWERI G, Cal ac pr 3:103 (1863). B 1:146.

Much like *A. tener* (perhaps not distinct); lfts broader, oblg-obcordate; forming pod more ovate, 6-ovuled, and 1-celled or nearly so. Sonoma valley, common in fields. Brewer. Fr unknown.

A. CALIFORNICUS Greene, Cal ac b 1: 157 (1885).

A. CALYCOSUS Torr ex Wat, Bot King 66. B 1:156. Nev.

A. CAMPESTRIS G 6:229. Parry, Pl

Wyo 5, 6. P 3:211 s.

A. CAMPYLOPHYLLUS P 3:195.

A. CANADENSIS L, Sp Pl 757.

Variety *MORTONI* Wat Bot King 69. B 1:155 as *A. Mortoni* Nutt.

A. CARYOCARPUS Ker- Gawl, Bot Reg t 176. Cockerell, W 5:11.

A. CANDIDISSIMUS Wat, bib ind 191 (1878), based on *Phaca candidissima* Bth. Greene, P 1:162 notes name is preoccupied by Ledebour, Fl Alt 3:309 (1829) and proposes the name *A. Magdalenae*.

A. CASEI G, B 1:154. Nev.

A. CATATINENSIS Nutt, Gam 152. B 1:146 as *A. didymocarpus*.

ASTRAGALUS CIRCUMDATUS Ge.

P 1:173. A 1:37 fdr.

A. CLEVELANDI Jepson, Er 1:10. Lake Co, Cal.

ASTRAGALUS COCCINEUS Parry.

Br, Z 2:72, 122.

A. COLLINUS Dougl, ex Hooker, Fl bor Am 141. B 2:442. G 6:225.

A. COLTONI Z 2:237.

A. CONFERTIFLORUS Z 2:242, 252.

ASTRAGALUS COULTERI Benth.

Bth 307. Parish, Z 5:114, "Whitewater, CD (not Mohave)". B 1:146. 2:442.

ASTRAGALUS CROTALARIAE A. Gray. G 6:216. B 1:149. SF. SD hills, (Cleveland).

A. CROTALARIAE Torr, bot Mex b 56 t 17 (B 1:149) excl syn as *A. oocarpus*.

Variety **VIEGATUS** G, B 1:149.

A. CURTIPES G 3:103. B 1:148.

A. CYMATODES P 3:196.

A. CYRTOIDES G 6:201. B 2:442 as *A. Gibbsii* K.

A. DIAPHANUS Dougl ex Hooker, Fl Bor Am 1:151. A 1:379 as *A. lentiginosus*. B 1:147 s.

A. DIDYMOCARPUS H & A, bot Beech 334 t 81. Greene, Cal ac b 1:154, 2:395. Cruz. Ab 222. Da 5. B 1:146.

Slender ann, 3 dm hi, pubescent with fine, somewhat scattered hairs; lfts 9-15, cuneate-oblg to linear, emarginate, 6-10 mm lg; spk lg-peduncled, dense, ovate or oblg, 2-3 cm lg; fis 3-5 mm lg, dull p'ish; pods erect, 4 mm lg, about as broad, scarcely exerted from cx, strongly wrinkled, 2-celled, 2-seeded. Marin Co to El Rosario, Baja!

A. DESPERATUS Z 2:243.

A. DIPHYUS G Pl Fendl 34. Br Colo 234. B 1:147.

ASTRAGALUS DISPERMUS A. Gray.

G 13:365. SD! Baja! M 1:137 as *Hesperastragalus dispermus* Heller.

A. DOUGLASHII G 6:215. B 1:150.

A. ERIOCARPUS Wat, Bot King 71, 440. B 1:151.

A. FASTIDIOSUS Greene, Cal ac b 1: 186. P 1:201, Cedros.

A. FILIPES Torr ex G 6:226. Parish, No 1281.

A. FILIPES G, B 1:152 = *A. stenophyllus* T & G.

A. FLAVUS Nutt ex T & G, Fl 1:335. (Parry, Pl Wyo 4:12 = *A. Grayi* Parry).

Z 2:228, 242, 252.

A. PAETIDUS P 3:211 s.

A. FREMONTII Torr, Pac Ry R 4:30. = *A. malacus* and *lentiginosus* fide IK. B 1:147 as *A. lentiginosus* var. *Fremontii*

Wat.

ASTRAGALUS GAMBELLIANUS Shel.
SD! Baja! (distributed as *A. didymocarpus*).

A. GEYERI G 6:214. B 1:146. Parry, Pl Wyo 3.

A. GIBBSII K 2:162. B 2:442, citates *A. cyrtoides* G as a synonym. Curran, Cal ac b 1:136—"Probably *A. cyrtoides*, Gray, but specimen without fr."

A. GLAREOSUS Douglas ex Hooker, Fl Bor Am 1:151. Parry, Pl Wyo 4.

A. GEANDIFLORUS Wat 17:370. Z 2: 122. P 3:210 s.

A. GRAYI Parry, Pl Wyo 12, 22. Z 2: 223.

"*S. Pectinatifolius*. Distinguished from *A. pectinatus* by the broader lfsts, which are 1-1½" lg by 1½-2½" broad, quite strongly veined, and by the somewhat thinner pod, ascending instead of deflexed. The fls are 'light y'-on the gravelly ridge bordering Owl creek valley."—Wat, Parry, Pl Wyo 22.

Synonym: *A. flavus* Parry (non Nutt).

A. HAYDENIANUS G in Br, Fl Colo 235. Z 2:240.

A. HOOKERIANUS G 6:215. B 1:147. P 3:186 as *A. Sonneanus*.

A. HOOKERIANUS Dietr Syn 4:1086 (1847). Mex. = *A. ervoides* fide IK.

ASTRAGALUS HORNII A. Gray.

G 7:398. B 1:150. Z 1:303.

Quintin (Or 124); Utah; Bakersfield, Cal
Glab or minutely pubescent: sts slender, ascending; lfsts about 21, narly oblq (4-7" lg); peduncle surpassing the lvs; fls num in a dense hd or sh spk, which is equally dense in fr: cx-teeth subulate, about the length of the campanulate tube; cor y'ish-w, straightish; pods ovate from a broad base and gradually acuminate, straight, villous-pubescent, 10-15-seeded. San Jorge, Baja (Br). Said to be one of the sheep poisons.

A. HYPOGLOTTIS L Mont 274.

Variety **STRIGOSA** K 2:115 f 37. B 1: 146 as *A. tener*. Cur 1:136 as *A. tener*.

A. INEPTUS G 6:525. B 1:147 as *A. lentiginosus*. A 1:379 s.

A. INFLEXUS Dougl ex G Don, Gen Syst 2:256. B 1:151.

A. INSULARIS K Cal ac b 1:6. P 1:201, Cedros (Veatch).

A. IODANTHEUS Wat, Bot King 70. B 1:154.

A. JEJUNUS Wat Bot King 73, 442. Br, Colo 234.

A. JUNCCEUS Nutt. Parry, Pl Wyo 4. G 6:230.

A. KENTROPHYTA G, Phila ac pr 60 (1863). B 1:156. Parry, Pl Wyo 14, 17.

A. LAYNEAE Greene, Cal ac b 1:156.

"Soft-villous throat: sub-caulescent, less than 1° hi, rather stout; lfsts in 9-11 pairs, obovate, obtuse, ½" lg; peduncles stout, 8-10" lg; raceme loose; cor not seen: cx-teeth triangular-subulate, sh: pod nearly 2' lg, acuminate at each end; obcompressed, partially 2-celled, strongly incurved, soft-hairy. Mohave Desert, Parish Brothers, 1882, No. 1273; Mrs. M. K. Layne-Curran, in the same locality, 1884."—Greene.

ASTRAGALUS LECTULUS S. Wats.
Wat. A 1:38 fdr.

A. LEMMONI G 8:626. B 1:155.

A. LENTIFORMIS G, B 1:156.

A. LENTIGINOSUS Dougl ex Hook, Fl Bor Am 1:151. A 1:379 d. B 1:147. Wash to So Cal.

Variety **FREMONTII** Wat. B 1:147. A 1:379 d.

Variety **FLORIBUNDUS** G. B 1:147. A 1:379 d.

A. LEUCANTHUS Pall, Astr 59 t 47 (1800). P 3:211 as *Aragallus leucanthus*.

A. LEUCOPHYLLUS T & G Fl 1:336. B 1:148.

A. LEUCOPSIS Torr, bot Mex B 56 t 16. A 1:381 d. P 1:33, Cruz. Da 5, Ab 223. B 1:149. Par 44 t. Br 1:209, Rosa. Mig. Cruz. Baja!

Variety **BRACHYPUS** P 1:33, 87.

Type locality: "Island of San Miguel", Cal.

ASTRAGALUS LIMITUS Sheldon.

A. LONCHOCARPUS Torr, Pac Ry R 4:80. Br, Colo 230.

A. LOTIFLOBUS Hook, Fl Bor Am 1:152. Parry, Pl Wyo 4.

A. MACRODON G 6:216. B 1:150.

A. MAGDALENAE P 1:162, based on *Phaca candidissima* Bth.

A. MALLACUS G 7:336. B 1:151. CD (Parish 1275).

A. MEGACARPUS G 6:215. B 1:148.

A. MENZIESII G 6:217. B 1:150.

A. MICROCYSTIS G 6:220. Parry, Pl Wyo 13.

A. MIGUELENSIS P 1:33, 87; 2:24 as *A. anemophilus*. Z 1:135.

Type locality: Island of San Miguel, Cal.

Br 1:209, Rosa; "probably a variety of *A. leucopsis*."

A. MOLLISSIMUS Torr, in Ann Lye NY 2:178 (1828). Z 1:95.

A. MORTONI Nutt, Phil ac J 7:19 (1834). B 1:155.

A. MOENOCOPHENSIS Z 2:12.

A. MULTIFLORUS G 6:226. B 1:153.

A. NEVINII G. San Clemente Isl.

A. NIGRESCENS Nutt, Gamb 152. Cur 1:153. Br 1:202, Cruz. Br, Z 1:113, Cat. Ab 222. B 1:146 as *A. didymocarpus*.

Ann; sts very slender, 1-2 dm hi, slightly pubescent; lfsts as in *A. didymocarpus*; spk less dense, cylindric, 2 cm lg; pods deflexed, well exerted from cx, slightly wrinkled, strongly obcompressed.

A. NUDUS Wat, Bot King 74, 443. B 1:153.

ASTRAGALUS NUTTALLIANUS D C. DC Prodr 2:289. B 1:146. CD! Baja! Tex. Ark.

More or less pubescent or hoary with w appressed hairs, soon diffusely branched from base: lfsts 11 or 13, oblq or broadly linear and mostly notched at end: cx-teeth slender and as lg as tube: cor w ish and p, about 3" lg; keel with the inflexed tip nar'd: pod over ½" lg, laterally flattish, slightly scythe-shaped, the incurvation mostly near the base, deeply grooved on the back, acutish on the other edge, 2-celled, several-seeded; the surface minutely reticulated, either glab or with minute appressed hairs.

A. OBSCURUS Wat, Bot King 69, 437. B

1:155; 2:442.

ASTRAGALUS OOCARPUS A. Gray.G 6:213. B 1:149. SD mts! Baja! Sber
A. OOPHORUS Wat, Bot King 73, 441.
B 1:148.**ASTRAGALUS ORCUTTIANUS** S. Wats.
Wat 20:361 A 1:87 fdr.**A. OROBOIDES** Hornem in Fl Dan t
1396. Parry, Pl Wyo 12.**A. OXYPHYSUS** G, Cal ac pr 3:103
(1863). B 1:148.**ASTRAGALUS PARISHII** A. Gray.

G 19:75. A 1:313 d. Ab 223. Ha 89.

A. PAUPERGULUS P 3:224.Type locality: "dry hillside of the
upper Sacramento," Cal.**A. PECTINATUS** Dougl, Hook Fl Bor
Am 1:142. Wat, in Parry, pl Wyo 22.**A. PICTUS** G 6:214. Br, Colo 227, Parry,
Pl Wyo 3.**A. PLATYTROPIS** G 6:526. B 1:147.**A. PONDII** P 1:288.Type locality: San Bartoleme bay,
Baja.**A. PONECTUS** Wat, Bot King 75, 411.
B 1:153.**A. PREUSSII** G 6:222 CD (Parish).**A. PTEROCARPUS** Wat, Bot King 71. B
1:154.**A. FURENTISSIMUS** T & G Fl 1:693.
B 1:150.**A. FURENTISSIMUS** Nutt in T & G Fl
1:693. Parry, Pl Wyo 4.**A. PULSIFERAE** G 10:69. B 1:150.**A. PUNICEUS** M 1:140.**A. PUESHII** Dougl, ex G Don Gen syst
2:271. B 1:151. Parry, Pl Wyo 4.Variety **COCCINEUS** Parry, W 7:10. Z
1:127 = *A. coccineus*.**ASTRAGALUS PYCNOSTACHYUS** G.
G 6:527. A 1:313. B 1:155. Da 5. Ab 223.**A. SABULOSUS** Z 2:239.**A. SILEBANUS** Z 2:242.**A. SONGARICUS** Pall, Astr 63 t 51. P
3:211 as *Aragallus*S.**A. SONNEANUS** P 3:186.**ASTRAGALUS SONORAE** A. Gray.G. Pl Wright 2:44. = *A. Arizonicus* fide
IK. Son (Wright 1850). Baja mts (Or
855). CD!**A. SOPHAROIDES** Z 2:12.**A. SPEIROCARPUS** G 6:225. B 1:152.**ASTRAGALUS STENOPHYLLUS** T-G.

T & G Fl, 1:329. Wash, Baja mts!

Synonym: *A. filipes* G, B 1:152.**A. STREPTOPUS** Greene, Cal ac b 1:155."Ann, diffusely branched, 1° or more
hj, minutely pubescent: lfsts in 5-7 pairs,
linear-oblg, retuse, 3-4" lg: peduncles
slender, 6" lg, 3-5-fid: pedicels remote,
slender, twisted: ex sm, the slender
teeth surpassing the tube: cor not seen:
pod linear, 1' lg, ascending, slightly in-
curved, compressed, completely 2-
celled, the dorsal side turned upward
by the twisting of the pedicel. Mohave
Desert, 1884, collected by Mrs. M. K.
Curran. A near relative of a *Nutt-*
allianus."—Greene.**A. STRIGOSUS** Sheldon. Ab 222.Slender, sparsely and minutely pubes-
cent, 15-20 cm hi; lfsts 9-15, linear or
cuneate, acute or retuse; fls num, cap-
itate on a slender peduncle, p and w;
pod 15 mm lg, slender, incurved, 2-
celled, 5-10 seeded.**A. TENEE** G 6:206. B 1:146. Da 5.**A. THOMPSONAE** Wat 10:345. B 1:151.**ASTRAGALUS TRICARINATUS** A. Gry.

G 12:56. CD (Parish 92). B 2:442.

A. TRICHOPODUS G 6:218. Cat. B
1:149.**A. TRIFLORUS** G, Pl Wright 2:45.
Quintin!**A. URALENSIS** L. P 3:210 as *Aragal-*
lus u.**A. UTAHENSIS** T & G, Pac Ry R 2:120.
B 1:151.**ASTRAGALUS VASEYI** S. Watson.

Wat 17:370. CD (Parish 735).

A. VERTICILLARIS L. P 3:211 as
Aragallus v.**A. WAEDII** G 12:55. Z 2:242.**A. WEBBERI** G, B 1:154.**A. WHITNEYI** G, 6:526. B 1:148.**A. WILSONII** P 3:196.**ARAGALLUS** Necker. P 3:209, based
on species of *Astragalus* and *Oxytropis*.**A. ARCTICUS** P 3:211 based on *O.*
arctica R Br App Parry's voy 278; G
20:4.**A. SPLENDENS** P 3:211 based on *O.*
splendens Dougl.**A. Mertensianus** P 3:211 based on *O.*
Mertensiana Turcz. Coasts of Behring
sea.**A. PARRYI** P 3:211 based on *O. Parryi*
G 20:4. Rocky mts.**A. VISCIDUS** P 3:211 based on *O. viscida*
Nutt. Rocky mts.**A. LEUCANTHUS** P 3:211 based on *A.*
leucanthus Pall (*O. leucantha* Pers).

N W Am; Asia.

A. MONTICOLA P 3:212 based on *O.*
Monticola Pursh. Wyo north.**A. LAMBERTI** P 3:212 based on *O.*
Lamberti Pursh. Rocky mts.**A. SERICEUS** P 3:212 based on *O.*
sericea Nutt. Colo, Wyo.**A. Bigelovii** P 3:212 based on *O. Lam-*
berti var. *Bigelovii* G 20:7. Colo
N M.**A. LAGOPUS** P 3:212 based on *O.*
Lagopus Nutt. Wyo, Mont.**A. NANUS** P 3:212 based on *O. nanus*
Nutt. Wyo, Mont.**A. BELLII** P 3:212 based on *Splasia*
Bellii, Britton, Can Rec Sci 148 (1894).
Hudson bay region.**A. MONTANUS** P 3:210 based on *A.*
montanus L. Eu.**A. URALENSIS** P 3:210 based on *A.* U,
L. Eu.**A. GRANDIFLORUS** P 3:210 based on
A. g. Pall. Eu.**A. SONGARICUS** P 3:211 based on *A. s.*
Pall. Eu.**A. CAMPESTRIS** P 3:211 based on *A. c.*
L. Eu.**A. FOETIDUS** P 3:211 based on *A. f.*
Villiers. Eu.**A. VERTICILLARIS** P 3:211 based on
A. v. L. Eu.**ASTROPHIA** Nutt in T & G Fl 1:278. =
Lathyrus fide IK.**A. LITTORALIS** Nutt as above. B
1:160 as *L. littoralis*.**ATAMISQUEA** Miers, Trav Chili 2:529
(1826).**A. EMARGINATA** Miers. B 1:50. Chili.**ATAENIA** Endl Gen Suppl 5:5 (1850)= *Atenia* H & A fide IK.**ATENIA** H & A. bot Beech 349 (1839).P 1:272 (as *Ataenia*).

A. GAIRDNERI H & A, bot Beech 349. P 1:274. B 1:259 as Carum.

A. HOWELLII P 1:274 based on Carum Howelli Coulter & Rose, Rev 129.

A. KELLOGGII P 1:274 based on Carum Kelloggii G.

A. OREGANA P 1:274 based on Odomia Oregana Nutt (Carum Oreganum Wat).

ATHEROPOGON Muhl ex Willd Sp Pl 4:934 (1805). = Bouteloua Lag fide IK.

A. OLIGOSTACHYUS Nutt Gen Am 1:78. B 2:291. = B. oligostachya.

ATHYSANUS Greene, Cal ac b 1:72 (1885). A 1:116 d.

Type: Thysanocarpus pusillus Hooker.

A. PUSILLUS Greene, Cal ac b 1:72; 2:390, Cruz. Ab 176. A 1:117 d.

ATALANTA Nutt, Gen 2:73 (1818). =

Cleome fide IK. = Peritoma DC fide P 4:208.

A. SERRULATA Nutt. P 4:210 as

Peritoma serrulatum DC Prodr 1:237.

ATAMASCO Raf, neogengt 3 (1825). =

Amaryllis L fide IK.

ATAMOSCO Adams, Fam 2:57. P 3:187.

= Amaryllis L fide IK.

A. ATAMASCO P 3:187 based on

Amaryllis atamasco L sp 292 (1753);

Zephyranthes Atamasco Herbert. App

Bot Reg 36 (1821).

A. TREATIAE P 3:187 based on

Zephyranthes Treatiae Wat, 14:300

(1879). Fla.

A. SIMPSONI P 3:187 based on

Zephyranthes Simpsoni Chapm Fl ed 3,

493 (1897). Fla.

A. PULCHELLA P 3:187 based on

Zephyranthes pulchella J. G. Smith, Mo

bot gard r 6:114 (1895). Tex.

A. TEXANA P 3:187 based on

Zephyranthes texana Herbert, bot mag

sub t 34 82.

A. ARENICOLA P 3:187 based on

Zephyranthes arenicola Br 2:205 (1889).

Baja.

A. ROSEA P 3:188 based on Zephyranthes

rosea Lindl bot reg t 821 (1824). W I.

A. TAUBERTIANA P 3:188 based on

Zephyranthes Taubertiana Harms, in

Regel Gartenf 45:281 t 1427 (1896).

Brazil.

ATRICHUM.

A. ANGUSTATUM Bruch & Schimp

Bryol Eu t 411. B 2:402 as Catharinea

angustata Brid.

A. UNDULATUM Bruch & Schimp

Bryol Eu t 410. B 2:402 as Catharinea

Callobryon Ehrh.

Genus ATRIPLEX Tournefort.

L syst ed 1 (1735). A 1:219 d.

A. ARGENTEA Nutt, Gen 1:198; ex Wat

Rev chenop 117. B 2:53 (Sierra Co,

Lemmon).

Synonym: Obione argentea Moquin.

A. BARCLAYANA D. Dietr, Syn Pl 5:

537. B 2:53.

ATRIPLEX BRACTEOSA S. Watson.

Wat 9:115. B 2:52, 482. Da 15 Ab 128, S.

= A. serenana of A. Nelson.

ATRIPLEX BREWERI S. Watson.

Wat 9:119. Greene, Cal ac b 2:411,

Cruz. A 1:219 d. B 2:55. Da 15.

Abrams, Fl LA 129. Bluffs along the

seashore.

Parish, Erythra 7:91. Monica.

Atriplex orbiculris S. Watson, Am ac pr 17:377.

ATRIPLEX CALIFORNICA Moq.

Moq in DC Prodr 13 (2):98. A 1:219 d.

Ab 129. B 2:54, 482. Da 15. Greene,

Cal ac b 2:411, Cruz P 1:93, Mig.—1:207.

Cedrus. Br 1:216, Rosa. McClatchie, Er

2:78, Mohave. Cat.

ATRIPLEX CANESCENS James.

James, Cat 1:8 (1825).

Type locality: "in the plains of the

Missouri near the Big-bend."

A 1:220 d. B 2:55, 54 (of Nutt as A.

Nuttallii). Z 2:102. Da 15.

Coville, CNH 4:180.

Abrams, Fl LA 130, Sber, SD.

A. CONFERTIFLOEA Wat 9:119. Br,

Colo 229. Da 15. B 2:55, 482 (Mohave).

Diffusely branched, 1-5" hl, somewhat

spinescent: lvs ovate or obovate to

oblancoolate, 2-8" lg, obtuse or acutish,

cuneate at base, shly petioled or sessile,

entire: fl-clusters sm, axv; ex 5-cleft:

bracts sessile, 2-6" lg, cuneate-orbicular;

sd 1" broad.

Synonyms: Obione confertiflora Torr.—

O. spinosa Moquin.

A. CORONATA Wat 9:114. B 2:53.

A. CORBUGATA Wat. Z 2:233. Colo.

ATRIPLEX COULTERI Dietr.

D. Dietr, Syn Pl 5:537. B 2:52, 482.

Wat, Rev Chen 113.

Synonym: Obione Coulteri Moquin.

Per, erect, 1-2" hl, slender, virgate,

rigid, branched and mealy; lvs lance-

olate, attenuate at each end and mucron-

ulate, entire, rather thick, 4-6" lg, 1"

broad or less; fr'ng bracts in ax

clusters, cuneate-obicular, 1" broad, the

rounded margin reaching nearly to the

base, with sh blunt teeth; sd ½" broad.

SD.

A. DECUMBENS Wat 12:275 (1877). A

1:221 as A. Watsoni. Ab 128, s.

ATRIPLEX DILATATA Greene.

P 1:264. San Benito Island (Pond).

ATRIPLEX EXPANSA S. Watson.

Wat 9:116. A 1:220 d. B 2:54. Da 15.

Southern California (Parish 1011).

Abrams, Fl LA 127 Ballona marshes.

ATRIPLEX HALIMOIDES Tineo.

ATRIPLEX HORTENSIS Linnaeus.

L, sp pl 1053. B 2:44. Cosmopolitan

(cult).

ATRIPLEX HYMENELYTRA S. Watson

Wat 9:119. B 2:55.

Colorado Desert (Parish 641).

Diffusely branched, 2-3" hl: lvs

deltoid, orbicular or rhombic, ½-1½"

broad, coarsely toothed, truncate or

cuneate at base, on sh petioles: fl-clus-

ters paniculate-spicate: ex 5-parted:

fr'ng bracts 3-6" broad, on a sh thick

pedicel, reniform-orbicular: sd 1"

broad. Colo. Ar. Ut.

Synonym: Obione hymenelytra Tor-

rey.

ATRIPLEX JULACEA S. Watson.

Wat 20:370. A 1:79 fdr.

A. LENTIFORMIS Wat 9:118. B 2:54.

ATRIPLEX LEUCOPHYLLA Dietr.

Dietr, Syn 5:536.

A 1:220 d. Ab 129. B 2:53. Da 15.

Greene, cal ac b 2:411, Cruz. P 1:93,

Mig.

ATRIPLEX MICROCARPA Dietr.

Dietr, Syn 5:536. Greene, cal ac b 2:411, Cruz, A 1:220 d. Ab 127. B 2:52. Da 15. Cat. Quintin.

A. NODOSA P 1:40. "Near Antioch, Cal."

A. NUTTALLII Wat 9:116. B 2:54. Z 2:337, 383. Br. col 229, 241.

A. ORBICULARIS Wat 17:377. Ab 129. Da 15. A 1:219 as A. Breweri.

ATRIPLEX PALMERI A. Gray.

Wat 11:146. B 2:54.

Guadalupe (Palmer, Greene).

ATRIPLEX PARISHII S. Watson.

Wat 17:377. Da 15. LA Co (Parish 1119).

A. PARRYI Wat 17:378. Parish Z 5:113 (Lancaster, Cal not Colton).

ATRIPLEX PATULA Linn.

L. sp pl 1053. A 1:221 d. B 2:51, 482.

Da 15.

Pacific rural press 33:510.

Abrams, Fl LA 127. Frequent in saline places.

Orache; an introduced weed, LA (Parish 1122).

A. PHYLLOSTEGIA Wat 9:108. B 2:51. Da 15.

A. POLYCARPA Wat 9:117. B 2:54.

A. PUSILLA Wat 9:110. B 2:52.

ATRIPLEX SEMIBACCATA R. Br.

R Br, Prodr 406. A 1:220 d. Ab 128.

Wiseburn; Wilmington; Santa Ana.

ATRIPLEX SERENANA A. Nelson.

A 1:221 d. Ab 128.

A. SPICATA Wat 9:108. B 2:51.

A. TORREYI Wat 9:118. B 2:55.

A. TRUNCATA G 8:398. B 2:52. Z 2:233.

ATRIPLEX WATSONI A. Nelson.

A 1:221 d. Ab 128, SD.

Atriplex decumbens Watson.

ATROPIS Rupr, Fl Samoj 64 (1845). = Glyceria R Br fide IK.

A. ANGUSTATA Griseb in Ledeb Fl Ross 4:390. = G. distans fide IK. B 2:308 as A. distans.

A. CALIFORNICA Munro ex G, Phil ac pr 1862: 336. B 2:309.

A. CONVOLUTA Griseb, as above, 389. = G. distans fide IK. B 2:308 as probably A. distans.

A. DISTANS Rupr Fl Samoj 64 Griseb as above, 388. = G. distans. B 2:308.

A. MARITIMA Griseb as above 489. = G. maritima fide IK. B 2:308 as A. distans.

A. PAUCIFLORA Thurber, B 2:310 = Poa pauciflora fide IK.

A. PROCUMBENS Thurber, B 2:309.

A. SCABRELLA Thurber, B 2:310. = Poa scabrella fide IK.

A. TENUIFOLIA Thurber, B 2:310 = G. tenuifolia fide IK.

A. TENUIFLORA Griseb as above, 389 = G. distans fide IK. B 2:308 as probably A. distans.

Genus **AUDIBERTIA** Benth.

Bentham, bot reg t 1469 (1831).— = Salvia (fide Greene, P 2:235).— = Ramona Greene.

AUDIBERTIA CAPITATA A. Gray.

G. 7:387 (1868).— = Salvia Mohavensis Greene, P 2:235.—A 1:131 as Ramona capitata Briquet. B 1:600.

Providence mts. S Ber Co (Cooper).

AUDIBERTIA CLEVELANDI A. Gray.

G 10:76 (1876).—A 1:131 as Ramona Clevelandi Briquet.— = Salvia Cleve-

landi Greene. P 2:236.—B 1:601.

San Diego mts (Cleveland, Palmer).

A. DORRRII K. 2:190. = A. incana Bentham (fide Cur 1:146).

A. DECURRENS Nutt, ex Bentham, in DC 12:359. = A. grandiflora Benth.

AUDIBERTIA GRANDIFLORA Benth.

Lab Gen et sp 312.— = Salvia spathacea, P 2:236.—Par 356.—A 1:131 as Ramona grandiflora Briquet.—Da 14.

B 1:600.

Los Angeles to San Mateo Co.

A. HUMILIS Bentham, Lab 313.— = Salvia Sonomensis, P 2:236.—A 1:132 as Ramona humilis Briquet. B 1:601.

AUDIBERTIA INCANA Benth.

Bth, bot reg t 1469.— = Salvia carnosa Douglas (fide Greene, P 2:235). B 1:600.

Wash to Baja! Idaho; Arizona.

Variety **PACHYSTACHYA** G, Syn Fl 2 pt 1. ed 2, 461 (1886).—A 1:276 as Ramona pachystachya. A 1:304 fdr.

AUDIBERTIA NIVEA Benth.

Lab gen et sp 313.—Br, 1:204 (Cruz).—A 1:278 as Ramona nivea.— = Salvia leucophylla P 2:236.

Santa Barbara to San Diego Co; Cruz.

AUDIBERTIA PACHYSTACHYA Parish.

Par, er 6:91 (1898).—A 1:276 as Ramona pachystachya; 1:304 fdr. M 1:4, s.

AUDIBERTIA PALMERI A. Gray.

G, B 1:601.—Greene, Cal ac b 2:410 (Cruz).— = Salvia Palmeri P 2:236.

—A 1:276, as Ramona Palmeri Briquet; 304. B 1:601. Da 14.

San Diego Co (Palmer); Cruz Baja.

A. POLYSTACHYA Bentham, Lab gen et sp 314.—Par 68.—A 1:224 as Ramona polystachya (P 2:235, 302). DC 12:360.

B-1:601. 2:477. Da 14.

A. SPINULOSA Nutt, ex Bth, in DC 12:359. = A. stachyoides.

AUDIBERTIA STACHYOIDES Benth.

Lab gen et sp 313.—Par 320.—Br, 1:204 (Cruz); 226 (SBar).— = Salvia mellifera Greene, P 2:236. B 1:601. Da 14.

San Francisco to Quintin! Cruz; Rosa.

Variety **REVOLUTA** Br, 1:216 (Rosa).

Margins of lvs revolute, giving to the bush a peculiar appearance.

AUDIBERTIA VASEYI Porter.

T. C. Porter, bot gaz 6:207 (1881).—A 1:276, 304, as Ramona Vaseyi Heller (M 1:59).

AULACOMNIUM Schwaegr, B 2:399.

Moss.

A. ANDROGYNUM Schwaegr, Suppl t 125. B 2:399.

A. PALUSTRE Schwaegr, Suppl t 226. B 2:400.

AURICULARIA. Fungi.

A. AURICULA Judae (L) Schroet. M 1:20. Porto Rico.

A. DELICATA (Fr) Hennings. M 1:20. Porto Rico.

AVICENNA L. Syst ed 1 (1735).

A. NITIDA Jacq. En pl carib 25. Magdalen and Santa Margarita Isl (Br).

AXINAEA R & P Prodr 68 (1794).

A. SPECIOSA Cogniaux. Torr. cl b 11.—Z 1:63. So Am.

AYENIA Loefl It 199 (1758).

A. MICROPHYLLA G, SMC 3:24 (1852).

NM. B 2:438.

AYENIA PUSILLA Linn.

L. Syst ed 10, 1247. B 2:438. Peru.
AZALEA, L. syst. ed. 1, 1, (1735). =
 Rhododendron. L. fide IK.

A. CALENDULACEA H & A, bot Beech 361.

Variety, Bth, Pl Hartw 321 (B 1:458 as R. occidentale).

A. NUDIFLORA L. sp pl ed 2, 214. = nudiflorum.

Variety CILIATA K. 1:60 is Rhododendron occidentale fide Cur 1:142.

A. OCCIDENTALIS T & G ex Torr, Pac Ry R 4:116. B 1:458 as R. occidentale.

AZOLLA

A. MEXICANA Schaffner. Underwood, Z 1:100 as A. Caroliniana. A 1:380, s. A. MICROPHYLLA Kaulf., En 273. B 2:352 and A 1:380 as A. Caroliniana.

Genus BACCHARIS Linnaeus.

L. Hort cliff 404 (1737).

Dioc per herbs or shrubs, with alt lvs and sm paniculate or corymbose hds of tubular fls: Inv of scale-like imbricated bracts: Receptacle flat, naked: Cor of pist fls slender, truncate or minutely toothed, that of the stam tubular, 5-lobed; Sty-branches of the fertile fls smooth exserted, those of the sterile fls rudimentary, tipped with an ovate pubescent appendage: ak more or less compressed, ribbed; pap of the pist fls copious, capillary, very fine and soft, becoming elongated in fr, that of the stam fls sh'fr.

B. BRACHYPHYLLA G Pl Wright 2:83. B 1:614.

B. CAERULESCENS DC, Prodr 5:402. B 1:333. = B. glutinosa fide IK.

BACCHARIS CONSANGUINEA D C. Prodr 5:408. B 1:332 as B. pilularis DC. Z 1:138 s. Greene, Cal ac b 2:401, Cruz. A 1:246.

BACCHARIS DOUGLASSII DC.

Prodr 5:400. Br 1:212, Rosa. Par 108 t. Greene, Cal ac b 2:402, Cruz. A 1:246. Br. Z 1:114, Cat. Ab 405. T & G, Fl 2:259. B 1:333. 2:456.

SF: SD Co! Cruz; Rosa.

Glab and somewhat glutinous; sts herbaceous nearly or quite to the ground, erect, 12 dm hi or less, simple up to the terminal corymb; lvs glutinous, ovate-lanceolate, either entire or serrulate, 3-nerved from near base, 7-14 cm, long; hbs about 6 mm, hi; involucrel bracts erose-ciliate, thin and pale with a gish center; pap of pist fls scarious, 4 mm, long, soft, of stam clavellate and barbellate at summit. SF. SD Co! **BACCHARIS EMORYI** A. Gray.

Gray, Bot Mex B 83 (1859).

Type locality: "On the Gila," Ar. Coville, CNH 4:127. Resting Springs. A 1:248 d. Ab 405. B 1:333.

L A: Arizona; Utah; Nevada; Arizona. **BACCHARIS GLUTINOSA** Pers.

Pers. Syn Pl 2:425 (1807).

A 1:248 d. Ab 406. B 1:333.

Type locality: "in R [egni] chilensis ruderatis."

Coville, CNH 4:127.

Baja; LA Co; Colo; Texas; Mexico; Chill.

BACCHARIS PILULARIS DC.

Prodr 5:407. A 1:248 d. Ab 405. B

1:332. Par 108. Br 1:212, Rosa.

Monterey—Oregon; Rosa; not SD Co?

B. PINGRAEA Nutt, Am phil sc tr 7:337 (1841). B 1:333 as B. glutinosa. **BACCHARIS PLUMMERAE** A. Gray.

G 15:48. A 1:249. B 2:456. Greene, Cal ac b 2:401, Cruz.

Abrams, Fl LA 405.—"Topango canyon (Davidson)."

Cruz; S Bar; L A Co (Parish 1110).

B. SALICIFOLIA Nutt, Am phil sc tr sr 2, 7:337 (1841). B 2:456 as B. salicina.

BACCHARIS SALICINA T. & G.

Fl 2:258. B 2:456.

Colo—Texas; S Ber (Parish 613).

BACCHARIS SAROTHIROIDES A. Gray.

G 17:212. P 1:204, Cedros.

SD Co; Cedros.

BACCHARIS SERGILOIDES A. Gray.

Pac Ry R 4:101. B 1:333. Cov 127. G.

bot Mex bound 83. Near Ft Yuma, Cal! Type locality: "along the Gila or Colorado."

Suffruticose: fig branches oft lfless; lvs spatulate or almost linear 1-3d or ¼" lg or reduced to mere scales, mucronate, entire; hds num and panicked, the sterile ones most clustered: inv of sterile hds 1½, of fertile 2" hi; the scales ovate lanceolate, or the innermost linear, rather acute; pap of fertile fls less copious and little exceeding inv: ak few-nerved.

BACCHARIS VIMINEA DC.

Prodr 5:400. A 1:246 d. B 1:333. Ab 406. Par 110. Greene, Cal ac b 2:402, Cruz.

Abrams, Fl LA 406. Very common along all our streams throughout our range. Ap-Jl.

Brandegee, Zoe 1:114, Cat.

Coville, CNH 4:127. Near S Ber.

Type locality: "in California."

Monterey, S Ber (Parish 702); Cruz; Cat, SD Co!

Genus BAERIA Fischer & Meyer.

Ind Sem Hort Pet 2:29 (1835).

Low mostly slender an, com pubescent, with opp linear entire or laciniate-pinnatifid lvs, and middle sized hds of y fls on slender peds: inv campanulate, its bracts com in 1 sr, distinct, com carinate below: Ray fls few or many, oft sh: AK clavate, linear or linear-cuneiform: Pap of few awns or paleae or both or rarely O.

B. AFFINIS G 19:23. A 1:339 d. Ab 428.

BAERIA ANTHEMOIDES A. Gray.

B. CHRYSOSTOMA F & M as above.

A 1:340 d. Ab 428. B 1:375. Da 9.

B. CONSANGUINEA P 1:284. Baja!

BAERIA CORONARIA A. Gray.

B. FREMONTII G 7:358.9:196. B 1:377.

B. MACRANTHEA G 19:21 Z 2:383.

B. MARITIMA G 9:196. B 1:376. Z 2:360.

B. PLATYCARPHA G 9:196. B 1:376.

B. TENELLA G 19:23. Ab 428. A 1:339 d.

BAERIA MUTICA A. Gray.

G 19:23. Ab 428.

Sts slender, erect, branching, 1-2 dm hi, glandular-pubescent; rays 10-15, elongated-oblong; pap of 6-8 quadrate-
 upj 181:1 V 11:2 d SALSONEANI D

oblong paleae with obtuse or truncate erose summits.

B. TENEREIMA G 9:196. B 1:376.

Like B, gracilis or com smaller and more slender; inv scales and rays 5-9 or 10; receptacle rather broadly conical and hardly acute; slender awns of pap 2 or more from a broad and ovate chaffy base. Ar. SD! north.

Section **EUBAERIA**. Pap of uniform (or mainly so) and entire awned or pointed paleae or chaffy-based awns or 0: receptacle muricate-roughened: ligules mostly conspicuous: lvs linear and entire (except in 1 sp.).

BAERIA GRACILIS A. Gray.

G 9:196. B1:376. Ab 428. Da 9. Par 128 t. Br 1:203 Cruz, 212 Rosa.

Sts slender, usually about 1 dm hi; lvs narrowly linear; bracts and rays 10-12 or sometimes less; rays 4-6 mm long; ak linear-cuneate, broad at the summit, commonly caescent; pappus of w, lanceolate or ovate, slender, awned paleae or the paleae sometimes almost obsolete.

BAERIA PARISHII S. Watson.

'Low and slender much branched, pubescent with loose woolly hairs; lvs narly linear, acute, mostly pinnately cleft with 1-several pairs of lobes: hds sm 12" hi or rarely more; inv bracts 10-12, thin & lax, the midvein not prominent: ligules sh: sty-tips truncate, with an oblique apiculation on the inner side: ak slender, without pap.—Wat 24:33.

BAERIA CURTA A. Gray, Am ac pr 19: 21.

'Hds only 2 or 3" hi; bracts & rays 8 or 10; pap of ovate or obig pointless paleae, not exceeding the breadth of ak, usually 4 or 5, or in ray-fls reduced to 1, in some o. Near SBER (W. G. Wright).

BAERIA CLEVELANDI A. Gray.

Lvs linear, 1" wide, obtuse, entire: bracts of inv 8-12, ovate, rather obtuse, pale; pap-paleae 2, slender awned. SD.

Section *Dichaeta*, pap of 2 forms,

*Unlike in disk & ray.

BAERIA PALMERI A. Gray.

G, B 1:376, Guad.

"Dwarf, less than a span hi, rather stout, diffusely branched from the base, hirsute-pubescent: lvs linear, thickish, all entire: peduncle thickened under the hd: scales of inv 9 or 10, ovate, thickish-herbaceous, with midrib carinate-thickened and salient at base, and lateral nerves indistinct: rays as many, oval, rather sh: receptacle obtusely conical; ak linear and slightly nar'ed below: pap of 5 (or sometimes more) broadly ovate fimbriate-lacinate scales, these of the disk with a stout awn of the ray mostly blunt and awnless."—G.

Variety **CLEMENTINA** G syn Fl supp 452.

Greene, Cal ac b 2:403, Cruz. SD. Br 1:212, Rosa, Cruz. P 1:90, Mig.

**Not unlike in disk & ray,

BAERIA ULIGINOSA A. Gray.

G 9:196. B 1:377.

Diffuse, at length decumbent, a span to 1' hi, loosely pubescent with somewhat cobwebby hairs; lower or most of the lvs copiously pinnatifid from a broad or broadish rhachis; the lobes narly linear; scales of inv and obig exserted rays com 10-13; throat of disk-cor very broad, and nar tube rather sh; pap of 2 or 3 stout chaffy-subulate awns, and as many or twice as many intervening conspicuous and broad truncate and lacinate-fimbriate scales.

Synonym: *Dichaeta uliginosa* Nutt.

Variety **TENELLA** G 7:358. B 1:377:—"is only depauperate state, on drier soil, with nar linear lvs, and more of them entire; the rays and inv scales reduced to 8 or 9 or rarely to 5 or 6."

BAHIA Lag Gen et Sp 30 (1816).

B. **ACHILLAEIODES** DC, Prodr 5:657.

B 1:381 as B. lanata var. achillaeoides.

= *Eriophyllum caespitosum* fide IK.

B. **AMBIGUA** G, B 1:382. = *Eriophyllum*

ambiguum fide IK.

B. **ARACHNOIDEA** F & M, Ind Sem Pet.

9:63. B 1:382. = *Eriophyllum caespit-*

osum fide IK.

G, Pl Fendl 100.

B. **ARTEMISIAEFOLIA** Less in Linnaea

4:160 (1829). B 1:380. = *Eriophyllum*

caespitosum fide IK.

B. **CONFERTIFLORA** DC, Prodr 5:657.

B 1:380. = *Eriophyllum confertiflorum*

fide IK.

Variety **TRIPIDA** G, B 1:380. (B. trifida

Nutt.)

B. **CUNEATA** K 5:49. Cur 1:140 as

Eriophyllum caespitosum integrifolium

Douglas. B 1:380 as B. *integrifolia*

DC.

B. **DESERTORUM** Z 2:249.

B. **GRACILIS** H & A, bot Beech 353. B

1:382. = *Eriophyllum gracile* fide IK.

B. **ARTEMISIAEFOLIA** Less in Linnaea

B. **INTEGRIFOLIA** DC 5:656. B 1:381.

= *Eriophyllum caespitosum* fide IK.

B. **LANATA** DC Prodr 5:657. B 1:381.

= *Eriophyllum caespitosum* fide IK.

B. **LATIFOLIA** Bth, Voy Sulph 30. =

Eriophyllum caespitosum fide IK. B 1:

382 as B. *arachnoidea* F & M.

B. **LEUCOPHYLLA** Eaton, in Wat Bot

King 17. B 1:382 as B. *gracilis* in part.

Eriophyllum Watsoni in part fide IK.

Parry, Pl Wyo 13.

B. **NUDICAULIS** G 19:27. Z 2:231.

B. **PARVIFLORA** G, B 1:382. =

Eriophyllum ambiguum fide IK.

B. **RUBELLA** G, Torr, Bot Mex Bound

95. B 1:379 as *Actinolepis Wallacei* G.

= *Eriophyllum Wallacei* fide IK.

B. **STAECHADIFOLIA** DC Prod 5:656.

B 1:380. = *Eriophyllum staechadifolium*

fide IK.

B. **TENUIFOLIA** DC, Prod 5:657. B 1:

381 as B. *lanata* DC.

B. **TRIFIDA** Nutt, Am phil sc tr sr 2,

7:374 (1841). B 1:380 as B. *conferti-*

flora var. *trifida*.

B. **WALLACEI** G, Bost sc nat hist pr 7:

145. B 1:382 as B. *parviflora* G. G, Pac

Ry R 4:105 = *Actinolepis Wallacei* fide B 1:379. = *Eriophyllum ambiguum* fide IK.

BAHIOPSIS K 2:35.

B. LANATA K 2:35; Hesperian Ag 1860 with f. B 7:354. Cur 1:139:—"Vigulera lanata G, according to G, who is in possession of the only specimen collected."

Genus BAILEYA A. Gray.

Emorys Rec 144 (1848). G, Pl Fendl 105. G 9:195.

"Inv hemispherical, of num thin-herbaceous linear bracts in 2 or 3 sr, very woolly on the back. Receptacle flat or barely convex. Ray-fls 5-50; the ligules from round-oval to oblg-cuneate, 3-toothed at apex, 7-nerved, tapering into a nar but not tubular base, becoming scarious-papery but thin, persistent on the truncate summit of ak. Disk-fls fertile; their cor tubular-funneliform above the sh proper tube, 5-toothed; teeth glandular-bearded. Sty-branches sh, with truncate-capitate tips. Ak oblg-linear or clavate, somewhat angled, pluricostate or striate; the truncate apex obscurely toothed by extension of ribs, or in the ray callous-thickened."—G, Syn Fl 1 (2):71.

BAILEYA MULTIRADIATA H. & G. Harv & Gray. Torr, Emory rec 144 t 6. Rothrock in Wheeler R 6:175.

"Densely floccose-woolly: st simple or sparingly branched below, bearing lg, naked or sometimes scape-like peduncles (4-12" lg); lvs nearly all once or twice pinnatifid: hd large; rays 40 or 50 in about 2, ranks, cuneate oblanceolate (fully ½" lg); ak as in *B. pleniradiata*, smooth and glab or with some resinous globules."—B 1:373. Tex, Ut, Ar, CD, Mex.

BAILEYA PAUCIRADIATA H. & G. G. 9:195.

"Slender, paniculately branched to the summit, somewhat villous as well as woolly: lvs mostly linear, the upper entire, the lower elongated and laciniate-pinnatifid: peduncles slender, seldom over 1' lg; hd sm, rather few-fld: the oval rays 5 or 6 (sh-unguiculate, only 3 or 4" lg); disk-fls 10-20; ak evenly many-striate, rough with minute points."—B 1:373. CD! Ar.

B. PLENIRADIATA Harv & Gray ex G, Pl Fendl 105. B 1:373. = *B. multiradiata* fide G.

BALSAMORHIZA Hooker Fl Bor Am 1: 310 (1833).

B. BOLANDERI G 7:356. B 1:348.

B. CAREYANA G, Pl Fendl 81. B 1:347.

B. DELTOIDEA Nutt. Am Phil sc tr sr 2. 7:351 (1841). B 1:348.

B. GLABRESCENS Bth, Pl Hartw 317. = *B. deltoidea* fide B 1:348.

B. HELIANTHOIDES Nutt, as above. B 1:348 as *B. sagittata*.

B. HIRSUTA Nutt, as above, 349. B 1:348 as *B. Hookeri*.

B. HOOKERI Nutt, as above, 349. B 1:348. Parry. Pl Wyo 6.

B. INCANA Nutt, as above, 350. B 1:348 as *B. Hookeri*.

B. MACROPHYLLA Nutt, as above. B 1:347.

B. SAGITTATA Nutt as above. B 1:

348. Par 197. Parry, Pl Wyo 6.

B. TEREBINTHACEA Nutt, Am phil sc tr, sr 2, 7:349 (1841). B 1:348 as *B. Hookeri*.

BANALIA Moq in DC Prod 13 (2):273 (1849).

B. OCCIDENTALIS Moq as above, 279. = *Nitrophila* oc fide B 2:43.

BARBAREA R Br in Alt Hort Kew, ed 2, 4:109 (1812). A 1:123 d.

B. BARBAREA Mac M. A 1:123 d. Ab 171.

B. VULGARIS R Br as above. A 1:123 as *B. barbarea*. B 1:40. Z 2:120, 339. Ab 1:171 as *B. barbarea*.

Variety **AECUATA** Fries. A 1:123 d. Variety **GLABRIOR** Robinson. A 1:123.

BARBULA Lour Fl Cochinch 366 (1790). B. SINENSIS Lour. = *Caryopteris incana* fide IK.

BARBULA Hedwig. Moss.

B. AMPLEKA Lesq, Am phil sc tr 13:5. B 2:370.

B. ANOMALA Bruch & Schimp, Bryol Eu t 169. B 2:367 as *Trichostomum anomalum* Schimp.

B. ARTOCARPA Lesq, Am phil sc tr 13: 4. B 1:371.

B. ATROVIRENS Schimp, Syn Musc Eu, ed 2, 194. B 1:369. SF, Guad, Eu.

B. BEEHEYI Lesq, B 1:372.

B. BOLANDERI Lesq, Am phil Sc tr 13:5. B 2:370 (on rocks near SF, Colo).

B. BRACHYPHYLLA Sulliv, Pac Ry R 4:186 t 2. B 2:371, near Benicia, Cal.

B. BEEVIFES Lesq, Cal ac mem 1:12. B 2:370 (Cal, Nev).

B. CHLORONOTOS Bruch, Bryol Eu t 141. B 2:369 (Eu, Ar).

B. CONVOLUTA Hedw, Musc Frond 1: 86 t 32. B 2:372, Eu; SF.

B. CUNEIFOLIA Bridel. B 2:369 (Eu; near Oakland, Cal).

B. FALLAX Hedw, Musc Frond 2:66 t 24. B 2:370 (Eu; Cajon Pass; SF).

B. FLEXIFOLIA Hampe, Linnaea 30: 456. B 2:372, SF.

B. GUEPINI Schimp, Syn Musc Eu, ed 2, 197. B 2:369 (France, Oakland, Cal).

B. INERMIS Bruch. B 2:372. Eu, mts w of Colo river.

B. INSULANA De Not. = ? *B. Beecheyi* fide B 2:372.

B. LAEVIFILIA Bridel. B 2:373. Eu, Af, Cal, Nev.

B. LATIFOLIA Bruch. B 2:373. Eu, Ore, Cal.

B. MARGINATA Bruch & Schimp, Bryol Eu t 158. B 2:370 (Eu, No Af, on rocks near SF).

B. MEMBRANIFOLIA Schultz. B 2: 369 (Eu, Ar, Cal).

B. MUELLERI Bruch & Schimp, Bryol Eu t 168. B 2:373. Chili, Eu, Nev, Cal, Vancouver Isl.

B. PURPUREA Muell, Fl 58:78 (1875). B 2:371. near Oakland, Cal.

B. RIGIDA Schultz, Recens Barb t 32 f 1. B 2:368. Eu.

Variety **PILIFERA** Schimp De Not, Musc It t 4. B 2:368 (Guad, Palmer).

B. RIGIDULA Schimp, Syn Musc ed 2: 206. B 2:371. Eu; Vancouver Is; Cal.

B. RUBIGINOSA Mitten, Linn sc J 8:27. B 2:362 as *Pottia rubiginosa*.

B. RUBALIS Hedw. B 2:373. Eu, Cal, Ore, Nev, Ut, Tex, US.

Variety **GIGANTEA** Lesq, Cal ac mem 1:13. B 2:373.

B. SEMITORTA Sulliv, Pac Ry R 4:186 t 3. B 2:371, near Benicia, Cal.

B. SUBFALLAX Muell, bot zeit 20:338. B 2:370 San Jose valley, Cal (J. Bauer).

B. SUBULATA Bridel. B 2:372. Eu, Canada, Cal, Ar.

B. VAHLIANA Schultz, Recens Barb 222 t 34 f 31. B 2:370. Eu, Cal.

B. VINEALIS Bridel. B 2:371 (SF, Eu).

B. VIRESCENS Lesq B 2:372, Oakland, Cal.

BARKHAUSIA Moench Meth 537 (1794).

B. LESSINGII H & A bot Beech 1:145.

B 1:438 as Troximon spargioides Less.

BARTONIA Tims, bot mag t 1487

(1804), not Muell (1801).

B. AUREA Lindl, bot reg t 1831. B 1:

236 as Mentzelia Lindley. Par. 172, s.

B. LAEVI CAULES Dougl ex Hook Fl Bor

Am 1:221 t 69. B 1:237 as Mentzelia

laevicaulis.

B. Micrantha H & A, bot Beech 343 t 85.

B 1:236 as Mentzelia micrantha.

BARTRAMIA Hedw (Moss), not L

(1747), or Salisb (1796).

B. CALCAREA Bruch & Schimp. B 2:

401. Eu, Nev.

B. CRISPA B 2:401 as B. pomiformis.

B. PONTANA Brid. B 2:401. Eu, India,

Patagonia, Nev, Colo, Ut, Cal.

B. ITHYPHYLLA Brid. B 2:401. Wash,

Eu, Asia.

B. MENZIESII Hook, Muse Exot t 67. B

2:400. Cal.

B. POMIFORMIS Hedw, Engl bot t 998.

Eu, Asia, Ore.

B. STRICTA Brid, B 2:400. Eu, SF.

BAERTSIA L, Hort Cliff 325 (1737).

B. ACUMINATA Pursh, Fl 2:429. B 1:

575 as Castilleja pallida, var. septen-

trionalis or C. miniata.

B. PALLIDA L, sp pl 602. B 1:575 as

Castilleja = pallide.

B. TENUIFOLIA Pursh, Fl 2:429. B 1:

577 as Orthocarpus tenuifolius.

BATIDEAE, A 1:222 d.

BATIS L, syst, ed 10, 1380 n 1172 (1759).

A 1:222.

B. MARITIMA L, syst, ed 10, 1380. A 1:

222 d. Ab 135. B 2:60.

B.? VERMICULATA Hook, Fl Bor Am

2:128. B 2:59 as Sarcobatus vermicul-

atus Torr.

BEAUCAERNEA Lem, Ill Hort 8: Misc

59 (1861).

B. BIGELOVII Baker, J bot 10:326. B

2:163 as Nolana Bigelovii.

BATODENDRON Nutt, Am phil sc tr, sr

2, 8:261 (1843). = Vaccinium L fide IK.

B. ARBOREUM Nutt. P 3:325.

B. GLAUDESCENS P 3:326.

B. SPECIOSUM P 3:326.

BEBBIA Greene, Cal ac b 1:179 (1885).

Much branched suffrutescent plants

with few mostly opp nar lvs, and scat-

tered discoid hds. Inv campanulate, its

bracts imbricated in 3-4 sr, the inner

somewhat scarious and striate. Recep-

tae chaffy; the chaffy bracts persistent,

lanceolate, partly embracing the ak,

nearly equaling those of the inv. Cor

tubular, y. Ak turbinate, slightly ob-

compressed. Pap consisting of 1 sr of

lg rather stout plumose bristles.

B. ATRIPLICIFOLIA Greene, Cal ac b

1:181, based on Carphophorus atriplici-

folius G 5:159. Br 2:180.

B. JUNCEA Greene, Cal ac b 1:179, 181,

based on Carphophorus juncus Bth. Ab

418. P 1:204, Cedros. Br 2:180, Magda-

lena Is. Ar.

Much branched from a woody base, 10-

15 dm hi; flg branches rush-like, nearly

ifless, pale g and glab or minutely and

sparsely scabrous; lvs mainly opp,

linear; hds scattered, terminating the

branchlets, 1 cm hi; pap-bristles equal-

ing the slender cor; ak appressed-pubes-

cent.

BECKMANNIA Host, Gram Austr 3:5 t

6 (1805).

B. EUCAEFORMIS Host as above. B

2:264. Eu, Asia, Cal, Ore, Ut.

BECKWITHIA

B. JUNIPERINA M 1:144, based on

Ranunculus juniperinus Jones.

BELLIS L, Gen, ed 1, 256 (1737).

B. PERENNIS L, sp pl 886. Eu, Da 8,

Er 1:61 (LA Co). Vasil Z 1:48.

BELOPELONE Nees, in Wall Pl As Rar

3:76, 102 (1832).

Cx equally 5-parted, subtended by a

pair of sm bractlets. Cor tubular, bila-

biolate; the upper lip interior in the bud,

concave, erect or arching, entire or em-

arginate; the lower spreading and 3-

lobed. Sta 2: anth 2-celled; the cells dis-

joined, one higher than the other, the

lower one with a sh spur at base. Sty

filiform; stg mostly entire. Cap clavate,

having a lg empty stalk-like base; the sh

cells each 2-seeded. Mostly shrubs of

tropical Am; with fls in spks or racemes;

the bracts and bractlets sm and nar.

B. CALIFORNICA Bth, Voy Sulph 38. G

Syn Fl 2 (1) 329. Z 2:143. CD! Baja!

Br 2:193 (Cape San Lucas, Magdalena

bay, Magdalena and Santa Margarita

Isl). Ar.

"Tomentose or hoary; sts shrubby,

slender, oft becoming ifless; lvs ovate,

round-oval, or somewhat cordate, nearly

entire, slender petioled; racemes sh and

loose; bracts and bractlets decid: ex-

lobes subulate; cor dull r, nar, 1' lg; the

lips truncate; cells of the anth nearly

equal in size, the lower with a sh blunt

spur; cap tomentose, club-shaped, the

stalk-like empty base lg'er than the sd-

bearing portion."—B 1:588.

Synonyms: Jacobinia Californica nees.

Sericographis Californica G.

Variety **CONFERTA** Br 2:194, San Julio

canon, Baja.

B. HIANIS Br 2:194, Comondu, Baja. Z

2:149.

BERBERIS L, Gen, ed 1, 94 (1737). A

1:154 d.

B. AQUIFOLIUM Pursh, Fl 1:21 t 4,

Parry, Pl Wyo 10. Par 122. B 1:14, in

part as B. repens.

B. DICTYOTA Jepson. A 1:154 d. Ab

157.

B. FASCICULARIS Sims bot mag t 2396.

Schults f, Syst 7:17. B 1:15. Mex. = B.

pinnata fide IK.

B. FENDLERI G, pl Fendl 5. Br, Colo

228, 233. Z 2:103.

B. FREMONTI Torr, bot Mex bound 30.

A 1:154. Cov 58.

B. GRACILLIMA Heimerl, Engler's Bot

Jahr. Z 1:62. Mex.
B. NANA P 3:98.
B. NERVOZA Pursh, Fl 219 t 5, excl fls. B 1:15. Par 126.
B. NEVINII G. A 1:154 d. Ab 157.
B. PINNATA Lagasca, Elench Hort Madr 6 (1803), Mex. Br 1:201, Cruz. A 1:154 d. B 1:15. Da 2. Par 122.
B. PUMILA P 3:98.
B. REPENS Lindl, bot reg t 1176. A 1:154 d. B 1:14. P 3:98. Z 2:104. = **B. aquifolium** fide IK.
B. SIEBOLDII Miq, in Ann Mus bot Lugd Bot 2:69. Japan. Z 1:95.
BERGELLA.
B. TEXANA Schmitz, Icon t 219 f 1, 2, 26. B 1:80 as *Bergia texana*.

Genus *BERGIA* Linnaeus.

Mant 2:152 n. 1309 (1771).
B. TEXANA Seubert ex Walp Rep 1:285. Tex. A 1:27 d. B 1:80. 2:436.
BERGONIA Harv ex Bth & Hook Gen 2:1096 (1876).
B. VIRGATA Harv. B 1:488. Br 2:195. Purisima, Baja (cites *Pringleophytum lanceolatum* as a probable synonym).
BERNARDIA Houst ex P Br, Nat Hist Jam 361 (1756).
BERNARDIA MYRICAEOFOLIA S. Wat. B & H Gen 3:308. B 2:70. Parish, Z 5:114. (CD, not headwaters Mohave). Br 2:222. San Sebastian, Baja.
B. VIRIDIS Br 2:223. San Pablo, Baja.
BERTEROA DC, Mus Par mem 7:232 (1821), et Syst 2:290. = *Alyssum* fide IK.
B. INCANA DC Syst 2:291. P 4:204. = *A. incanum* fide IK.

Genus *BERULA* Hoffm.

Ex Bess Eu Pl Volh 44 (1822). = *Sium* fide IK. A 1:286 d.
BERULA ANGUSTIFOLIA Koch.
 Mert & Koch, in Roehlf Deutsch Fl 2:433. Greene, Cal ac b 2:299 (Cruz). P 1:88. Mig. B 1:260. 2:451. Da 7. A 1:286 as *B. erecta*.
 Throughout the U. S.; Mexico; Europe. Da 7. Cruz.

BERULA ERECTA Coville.
 Cov 115 (based on *Sium erectum* Hds), 23, 239. A 1:270, 286 d. Ab 287. Da 7.
Sium erectum Huds.
Sium angustifolium L.
Berula angustifolia Koch.
 Water Parsnip. LA (Nevin), north. Davidson, Pl LA Co 7.

BESSERA ELEGANS Schult.
BETA L. Syst ed 1 (1735).

B. VULGARIS L, sp pl 222. Eu, Af. Parish, Er 3:60 ("well established in some of the streets of Sber").
BETULA L. Syst ed 1 (1735).

B. GLANDULOSA Michx Fl 2:180. B 2:80.

B. OCCIDENTALIS Hook, Fl 2:155. B 2:79. Parry, Pl Wyo 6.

BICULLA Borkh in Roem Arch 1 (2): 46 (1797). = *Adiumia* fide IK.

B. CHRYSANTHA Ab 163. A 1:110 as *Dicentra* C.

B. OCHROLEUCA Heller. Ab 163. A 1:110 as *Dicentra* o.

BIDENS L, Gen, ed 1, 248 (1737). A 1:185 d.

B. AMPLISSIMA P 4:268.

B. BECKII Torr in Spreng syst 3:454. P

4:270 as *Megalodonta Beckii*. Torr, Fl NY 1: t 58. G, syn Fl 298. B & E, Ill Fl 440 t 3950.

B. BULLATA P 4:268.

B. CALIFORNICA DC Prod 5:599. B 1:357 as *B. pilosa*. T & G, Fl 2:354.

B. CERNUA L, sp pl 832. B 1:357. P 4:251.

BIDENS CHRYSANTHEMOIDES Michx Fl 2:136. B 1:357. Da 9, P 4:262. Br, Colo 227.

B. CILIOLATA P 4:256.

B. CUSICKII P 4:259.

B. DENTATA P 4:269.

B. ELEGANS P 4:254.

B. EXPANSA P 4:266.

B. FORMOSA P 4:264.

B. GLAUDESCENS P 4:258.

B. GRACILENTA P 4:255.

B. HETEROPHYLLA Orteg, Hort Matr 99 t 12. Mex. Z 1:309.

B. HETEROSPERMA G, Pl Wright 2:90, Ar. Z 1:309.

B. HYPERBOREA P 4:257.

B. KELLOGGII P 4:267.

B. LAEVIS P 4:262, as *B. chrysanthemoides*.

B. LEPTOMERIA P 4:264.

B. LEPTOPODA P 4:260.

B. LONGOPHYLLA P 4:258.

B. LUGENS P 4:254.

B. MACOUNII P 4:259.

B. MARGINATA P 4:262.

B. MELANOCARPA Wiegand. P 4:247 as *B. frondosa*.

B. NASHII Wiegand, Torr cl b 26:421. P 4:267. A 1:61 (of Cal as *B. speciosa*, Parish).

B. NUDATA Z 1:309.

B. PARRYI P 4:265.

B. PERSICAEFOLIA P 4:266.

B. PLATYCEPHALA Oerst, Ind Sem Haush r 7 (1859). P 4:261. Eu.

B. PILOSA L, sp pl 832. A 1:185 d. B 1:357. Ab 418. Da 9.

B. PRIONOPHYLLA P 4:256

B. REPRACTA Z 1:310.

B. RIPARIA HBK, Nov Gen 4:236. Venezuela. P 4:261. Mo.

BIDENS SPECIOSA Parish.

Parish, Z 5:75. A 1:61 fdr. Ab 417.

B. SUCCISAEOFOLIA Dillenius P 4:245 as *Coreopsis lanceolata*.

B. TRIPARTITA L, sp pl 831, Eu, Sib. P 4:243.

B. VULGATA P 4:72, 247.

B. XANTIANA Z 1:309.

Genus *BIGELOVIA* De Candolle.

Prod 5:329 (1836), not *Bigelovia* Spreng (1821 and 1827).

B. ACRADENIA Greene, Torr cl b 10:126 (1883). Da 8.

B. ARBORESCENS G 8:640 (1873). B 1:315, 614.

B. BOLANDERI G 8:641. B 1:315.

BIGELOVIA BRACHYLEPIS A. Gray.

G, B 1:614, 2:454. Br 2:169, El Rosario, Baja.

CD (Or 2224); El Rosario, Baja (Br).

B. CERUMINOSA G 8:643. B 1:316.

B. COOPERI G 8:640. B 1:315.

B. DEPRESSA G 8:643. B 1:316.

B. DIFFUSA G 8:640. B 1:314, 315.

BIGELOVIA DOUGLASII A. Gray.

G 8:644. B 1:317, 614. = *B. viscidiflora* fide IK.

British Columbia to Arizona; N. M.
Variety **SERRULATA** Gray.
Common through the dry interior region.

Variety **STENOPHYLLA** G. Nev, Ut, NM, Cal.

Variety **TORTIFOLIA** A. Gray.

Mts. Baja!

B. DRACUNCULOIDES DC Prod 5:329. B 1:317 as B. graveolens.

B. GLAREOSA Z 2:247.

BIGELOVIA GRAVEOLENS A. Gray.

G 8:644. B 1:317, 614. 2:455. = *dracunculoides* fide IK.

British Columbia to Mexico; Baja mts!

Variety **ALBICAULIS** G. British Col to SBER Co (Parish 1233).

Variety **APPENDICULATA** Eastwood, Cal ac pr sr 3, 1:74 (1897). M 1:6 as *Chrysothamnus appendiculatus*.

Variety **GLABRATA** A. Gray.

LA (Parish 1072).

Ha 125. LA (Parish 1072).

B. FURFURACEA Greene, Cal ac b 1:87 (7 Mr 1885).

Lvs thick, narly oblanceolate, 1-2' lg, entire, covered on both sides with close resinous scales, resembling scurf, which extend also to the branches and branchlets: infl corymbose-panicle; hd 4-5" hi, 12-15-fld; inv turbinate, its scales chartaceous, with blunt g'ish tips and more or less w-tomentose; sty-appendages subulate: pap of very unequal bristles: ak strongly sliky-pubescent."

Type locality: suspected to be Baja.

B. HOWARDI G 8:641, Colo. B 1:316.

B. JUNCHEUS. SD Co—San Telmo. Baja!
B. MENZIESII G 8:638. B 1:315. = *veneta* fide G.

B. MISSOURIENSIS DC Prod 5:329. B 1:317 as B. graveolens.

B. MOHAVEENSIS Greene. Mohave (Greene, Parry, Pringle).

BIGELOVIA PANICULATA A. Gray.

G 8:644. B 1:317, 614. 2:454. A 1:195 as *Chrysoma* P.

Colorado Desert (Parish).

B. PARISHII Greene, Torr cl b 9:62. A 1:195 as *Chrysoma* P. Ab 398, s. SBER mts (Parish 571).

B. RUPESTRIS Greene, bot gaz 6:183. A 1:194 as *Chrysoma cuneata* var. *spatulata*.

BIGELOVIA SPATHULATA A. Gray.

G 11:74. A 1:194 as *Chrysoma cuneata* var. *spatulata*. B 1:613.

BIGELOVIA TERETIFOLIA A. Gray.

G 8:644. B 1:316, 2:454.

Mohave; CD; Cantilles!

B. TRIDENTATA Greene, Torr cl b 10:126. P 1:204 (Cedros).

BIGELOVIA VENETA A. Gray.

G 8:638. Z 2:337, 356. Da 8. P 1:89 Mig; 204 Cedros. G, syn fl 1 (2):142. Greene, Cal ac b 2:400 Cruz. Br 1:211 Rosa. Ab 399 as *Isocoma vernonioides* Nutt. Ar; thru Baja.

Bigelovia Menziesii A. Gray.

Rosa; Cruz; Cedros; Arizona; throughout So Cal and Baja.

Variety **SEDOLIDES** Ge, Cal ac b 1:400.

Variety **SEDOLIDES** Greene, Cal ac b 2:400.—"Sts woody at base but wholly prostrate and less than a ft lg; lvs obovate, coarsely serrate, thick and succulent: hds rather large, crowded in a ter-

minal corymb." Cruz. P 1:89, Mig.

BIGNONIA L, syst, ed 1 (1735).

B. LINEARIS Cav IE 3:35 t 269. B 1:587 as *Chilopsis saligna*.

BIKUKULLA Adams Fam 2:23 (1763). A 1:109 as *Dicentra*.

B. CHRYSANTHA Cov 60. A 1:110 as *Dicentra chrysantha*.

BIOLETTIA Greene.

Type: *Biolettia riparia* Greene.

BISCUTELLA L, syst ed 1 (1735).

B. CALIFORNICA B & H ex Wat, B 1:48. 2:432. Da, Er 2:179 (LA Co). CD! Quintin! Br 2:128, Santa Margarita Isl.

Variety **MARITIMA** Da ex McClatchie, Er 2:179. A 1:329 fdr.

B. WISLIZEMI B & H ex B 1:48, 2:432. Br Colo 233.

BLAIRA Houst ex L, Gen, ed 1, 334, in syn (1737).

B. NODIFLORA Gaertn, Fruct 1:266 t 56. P 4:47 as *Phyla* n.

ELEGNUM.

B. BOREALE Swartz, Hook Brit Ferns t 40. B 2:343 as *Lomaria spicant*.

B. DOGDIODES Hook, Fl 2:263. B 2:343, British Columbia.

ELENNOSPERMA Less, Syn Comp 267 (1832).

B. CALIFORNICUM T & G Fl 2:272. Da 9. B 1:395. Cal.

B. chilense Less, Syn Comp 267. Chlii.

BLEPHARIGLOTIS Raf, Fl Tellur 2:38 (1836). = *Habenaria Willd* fide IK.

B. ALBA House, M 1:127, based on B. *blephariglotis*.

B. BLEPHARIGLOTIS Rydb in Britton Man 296 (1901). M 1:127 as B. *Alba*.

BLEPHARIPAPPUS Hooker, Fl 1:316 (1833). = *Layia* Bth.

Vernal ann with alt lvs or the lowest opp, and com showy hds of w or y fls terminating the branches: Bracts of inv flattened on back, more or less completely enfolding their obcompressed ak: rays 8-20 3-lobed; their ak obovate or nar'er, destitute of pap: Disk-fls with cylindraceous funnellform 5-lobed cor; their ak linear-cuneiform with a pap of bristles or awns: Receptacle flat, bearing a sr of chaffy bracts between the ray- and disk-fls.

B. ELEGANS Greene, Ab 424.

Habit of B. *hispidus* but taller, sparsely hirsute and more or less stipitate-glandular throat; lower lvs pinnately toothed, upper entire; rays y, about 1 cm lg; pap w, bristles densely villous below the middle.

B. GLANDULOSUS Hook Fl 1:316. P 3:168. B 1:368 as *Layia* g. Ha 130. Cov 133. Argus mts. Lydia g, H & A, Bot Beech 358.

Type locality: "on the plains of the Columbia, in sandy soils, under the shade of *Purshia* and *Artemisia*."

B. HISPIDUS Greene. Ab 424.

Diffusely branched from base or simple, 3 dm hi or less, hispid throat with spreading hairs and with a few sm dark-stalked glands on uppermost lvs and inv; lvs all nar and entire; rays w, about 1 cm lg; pap bright w, the bristles densely villous below middle.

B. NEOMEXICANUS P 3:168.

BLEPHARIPAPPUS NUDATUS Greene. P 3:168. A 1:62 fdr.

B. PLATYGLOSSUS Greene. Ab 425.

Sts com about 3 dm hi, sparingly branched, hirsute and stipitate-glandular; lower lvs pinnatifid into linear lobes; rays 10-15 mm lg, with creamy tips; disk-ak silky hirsute; pap of 15-20 scabrous tawny bristles.

B. SCABER Hook Fl 1:316. B 1:358.

Variety **LAEVIS** G. B 1:358.—"a form with the lvs, at least those of the branches, almost smooth and much appressed."

Variety **SUBCALVUS** G. B 1:358.—"a state with the pap both of ray and disk reduced to minute hyaline vestiges, hardly exceeding the hairs of the ak."

B. BONUS-henricus L. Eu.**B. BONUS-HENRICUS** L. Eu.

Variety **EROSUM** Moquin. B 2:48 as C. Californicum.

B. CALIFORNICUM Wat Rev Chen 101. B 2:48 as C. C.**B. CAPITATUM** L. B 2:48 as C. capitatum.**B. CARINATUM** Moq, DC Prod 13 (2): 81. B 2:48 as C. C.**B. CHENOPODIODES** Nutt. B 2:49 as Monolepis ch.**B. GLANDULOSUM** Moq, DC Prod 13 (2): 81. B 2:48 as C. carinatum.**B. MARITIMUM** Nutt, G. Man 408. B 2:48 as C. rubrum.**B. POLYMORPHUM** C. A. Meyor, Wat, Bot King 288. B 2:48 as C. rubrum.**B. RUBRUM** Reich. Wat, rev Chenop 99. B 2:48 as C. rubrum.

Variety **HUMILE** Moq. B 2:48 as C. rubrum var. humile.

Genus BLOOMERIA Kellogg.**K 2:11.**

Scape from a fibrous-coated corm. Leaves linear, carinate: Umbel with many y fls; pedicels jointed at summit and subtended by membranous bracts: Perianth persistent, of 6 nearly equal distinct linear-oblong seg; sta 6, inserted on base of and rather shorter than seg; fil filiform, surrounded at base by a cup-like appendage which is free from the perianth: Cap subglobose; sds 4-8 in each cell, angular and wrinkled; sty persistent and splitting with the loculicidal cap. (In honor of H. G. Bloomer, a pioneer botanist of San Francisco.) Golden stars.

B. AUREA K 2:11. Br 1:217. Rosa. Greene, Cal ac b 2:413. Cruz. Cur 1:148. Par 153 t. Da 17. Ab 86. B 2:152. K, Hesperian D 1859. f. A 1:179 d.

B. CLEVELANDI Wat, 20:376 (1885). A 1:179 fdr. Par 158.**B. MONTANA** Greene. A 1:179 fdr. **BLYTTIA** Fries Novit Fl Suec Mant 2:2 (1839).

B. SUAVEOLENS Fries. B 2:276 as Cinna arundinacea var. pendula. (= C. pendula fide IK).

BAEHMERIA Jacq, Enum Pl Carib 9 (1760).

B. NIVEA Gaudich in bot Freyc Voy 499. Asia. B 2:63. Cult.

Genus BOERHAAVIA Linnaeus.

Voill ex L. syst, ed 1 (1735).

Inv of 1-3 very sm bractlets to each fl, oft caducous. Perianth funnelliform

or campanulate, 5-lobed. Sta 1-3. Stig peltate. Fr clavate or obovate, jointed upon the pedicel, 5-costate, truncate at apex or rounded or acute. Slender ann or per herbs, diffuse or procumbent, with opp more or less unequal lvs, and com very sm fls in loose panicles, verticels or spikes.

B. BOERHAAVIA Br 2:199. Baja.

BOERHAAVIA ERECTA Linn. L. sp pl 3. B 2:5. Baja (Or 2090). Ar, NM. Br 2:199.

B. GRAHAMII G. Am J sci sr 2, 15:323. B 2:6 as B. scandens.

B. HIESUTA L. Mant 1:170. B 2:6.

B. POLYMORPHA Bth, bot Sulph 43.

Br 2:199 as B. erecta?

B. SCANDENS L. sp pl 3. B 2:6. Br 2:199. Peru, WI, NM, Ar.

B. SPICATA Choisy in DC Prod 13 (2): 456. B 2:6.

BOERHAAVIA VISCOSA A. Gray. Lag & Rodr in Anal Cienc Nat 4:256 n 12 (1801), Peru. Baja (Or 862). CD!

Br 2:199. SD foothills, Parish.

BOISDUVALIA Spach, Hist Veg Phan 4:383 (1835). A 1:333.

B. CLEISTOGAMA Cur 1:12 (1884). Da 6. A 1:333 d.

B. DENSIFLORA Wat, B 1:233. Er 1: 14. A 1:333 d.

B. DOUGLASHI Spach Monog Onag 80 t 31 f 1. Hist Veg Phan 4:385. B 1:233 as B. densiflora.

B. GLABELLA Walp Rep 2:89. B 1:233. Ab 265. A 1:333 d.

B. IMBRICATA M 1:42.**B. SPARSIFLORA** M 1:42.**B. TORREYI** Wat, B 1:233.**BOLANDRA** G 7:341.**B. CALIFORNICA** G 7:341. B 1:196.

BOLELIA Raf Atl J 120 (1832). = Downingia fide IK.

B. ELEGANS Par 321.

B. PULCHELLA P 2:126 based on D. pulchella. Par 321.

BOSCHIAKIA Mey. Bong. Veg Sitka 41.

B. Glabra Mey. Sib. Japan. B 1:585. P 3:78.

B. HOOKERI Walp Rep 3:479. B 1:585.

B. STEOBILACHA G, Pac Ry R 4:118. B 1:585. 2:476.

BOTRYCHIUM Swartz.

B. AUSTRALE R Br Prod 164. B 2: 332 as B. ternatum var. australe Eaton.

B. SILAIFOLIUM Presl Rel Haenk 1:76. B 2:332 as B. ternatum var. australe.

B. TERNATUM Swartz. B 2:332.

Variety **AUSTRALE** Eaton. B 2:332.

B. VIRGINIANUM Swartz. B 2:332, 485.

BOWLESIA Ruiz & Pav, Prod Fl Per 44 t 34 (1794). A 1:138.

Delicate ann, with stellate pubescence, opp lvs and scarios lacerate stip ules: umbels simple, few-fl. on sh axy ped; fls w, minute: ex-teeth prominent: fr ovate, somewhat flattened, laterally, with nar commissure, turgid, becoming depressed on back: ribs and oil tubes O. **B. LOBATA** R & P, Prod 44 t 34; Fl Per 3:23. Peru.

The following references belong to B. septentrionalis: Br, Z 1:114, Cat. Da 7.

B 1:255.

B. SEPTENTRIONALIS Coulter & Rose. A 1:138 d. Ab 278. B. lobata as to

the Cal references (not of R & P).
B. TENERA Spreng Syst 1:880. Brazil.
 B 1:255, as doubtless *B. lobata*.
BOYKINIA Nutt in Phil ac J 7:113.
B. ACONITIFOLIA Nutt. B 1:196.
B. MAJOR G, B 1:196. A 1:336 as
 Therofon major.
 Variety **INTERMEDIA** Piper, Er 7:172
 (1899). M 1:53 as Therofon interme-
 dium.
BOYKINIA OCCIDENTALIS T. & G.
 Fl 1:577. B 1:196, s. Ab 189 s. Par 83.
 See Therofon elatum.
 Variety **ELATA** G. A 1:326 as Therofon
 elatum.
B. RICHARDSONII G, Am J sci, sr 1,
 42:21. B 1:196.
BOYKINIA ROTUNDIFOLIA Parry.
 G 13:371. B 2:445. Da 5. Ab 190 s. A
 1:326 as Therofon rotundifolium.
BRACHYACTIS Ledeb Fl Ross 2:495
 (1846).
B. CILIATA Ledeb lc. B 1:326 as *B.*
frondosa. = *Aster angustus* fide IK.
B. PRONDOSA G 8:647. B 1:326. =
Aster frondosus T & G, fide IK.
BRACHYRIS Nutt, Gen 2:163 (1818).
B. EUTHAMIAE Nutt, lc. B 1:302. =
Gutierrezia E, fide IK.
BRACHYTHECIUM (= *Hypnum*). Moss.
B. ASPERRIMUM Sulliv = *H. a.* fide B
 2:413.
B. COLLINUM B & S = *H. c.* fide B 2:
 413.
B. HILLEBRANDI L esq = *H. H.* fide B
 2:413.
B. LAETUM B & S = *H. l.* fide B 2:412.
B. POPELUM B & S = *H. p.* fide B 2:
 413.
B. RUTABULUM B & S = *H. r.* fide B
 2:413.
B. SALEBROSUM B & S = *H. s.* fide B
 2:413.
BRAHEA Mart, Hist Nat Palm 3:243,
 319 t 137, 162 (1830?).
B. ARMATA Wat 11:146. B 2:12 as
Erythra armata.
B. CALCARATA Liebm ex Linden, Cat
 n. 87 (1871). error for *calcareae*.
B. DULCIS J Cooper, Smiths r 1860,
 442. B 2:211 as *Washingtonia filifera*.
B. EDULIS H. Wendt ex Wat 11:120,
 146. B 2:212 as *Erythra e.*
B. FILAMENTOSA Hort ex Wat, 11:
 120, 146. B 2:211 as *Washingtonia*
filifera.
B. POEZLI Linden, II Hort 28:38
 (1881). Ar. = *Erythra armata*.
BRASENIA Schreb, Gen 372 (1789).
B. PELTATA Pursh Fl 2:389. B 1:16.
 Jepson, Er 1:13. = *Schreberi* fide IK.
B. SCHREBERI JF Gmel, syst 853.
 Japan.
BRASSICA L, syst ed 1 (1735). A 1
 :118 d.
B. ADPRESSA Boiss Voy Esp 2:38. A
 1:118. Z 1:57.
B. ALBA Boiss, lc, 39. A 1:118 d. Ab
 170. Da 2. Z 2:27.
B. CAMPESTRIS L, sp. pl 666. A 1:
 118 d. B 1:39 Ab 170. Da 2. Z 1:57.
 Br 1:201, Cruz. P 1:85 Mig.
B. NIGRA Koch in Roehl Deutsch Fl, ed
 3, 4:713. A 1:118 d. Ab 170. B 1:39.
 Da 2. Z 1:57. Par 143, Greene, Cal ac b
 2:390, Cruz.
B. SINAPISTRUM Bois lc. B 1:40. Z

1:57. A 1:119 d.
BRAUNERIA Neck Elem 1:17 (1790). =
Echinacea fide IK.
B. ANGUSTIFOLIA M 1:5.
BRAUNIA Bruck & Schimp.
B. CALIFORNICA L esq, Am phil sc tr
 13:8; Cal ac mem 1:15. B 2:375. Moss.
BRAYA Sternb & Hoppe in Denk Reg
 1(1):65 (1815).
B. OREGONENSIS G 17:199. Parish,
 Er 3:60, Bear.
BREVOORTIA Wood, Phil ac pr (1867)
 81.
B. COCCINEA Wat 14:239. = *Ida-Mala*.
 B 2:156.
B. IDA-MAIA Wood, as above, 82. B
 2:156 as *coccinea*.
BREWERIA R Br Prod 487 (1810).
B. MINIMA G 17:228.
BREWERINA G 8:620 = *Arenaria*.
B. SUFFRUTESCENS G, as above. B
 1:69 as *Arenaria congesta* form.

Genus BRICKELLIA Ell.

Ell sketch 2:290 (1824). = *Coleosanthus*
 fide Greene.
BRICKELLIA ATRACTYLOIDES A. G.
 G 8:290. Cov 119.
 See *Coleosanthus atractyloides*.
 Cantilles! Utah (Palmer, Parry).
B. BACCHARIDEA G, Pl Wright 1:87.
 Tex. Ar.
B. BETONICAEFOLIA G, Pl Wright 2:
 72 NM. Ar.
B. BRACHYPHYLLA G, Pl Wright 1:
 84.
BRICKELLIA CALIFORNICA A. Gray.
 G, Pl Fendl 64. Ha 125. Da 8. B
 1:300. Greene Cal ac b 2:400, Cruz. A
 1:189 as *Coleosanthus cal.* Cov 119.
 Mendocino Co—Baja! Cruz. CD.
B. CEDROSENSIS Greene, Torr cl b 10:
 86, Cedrus. P 1:203.
B. COULTERI G, Pl Wright 1:86. B 1:
 300.
B. DESERTORUM Cov 119. A 1:189 as
Coleosanthus d.
BRICKELLIA FRUTESCENS A. Gray.
 G 17:207. CD. Br 2:168, Agua Dulce,
 Baja.

Lvs all alt, spatulate, veinless; shrub;
 hds sparse or solitary.

CD—Agua Dulce, Baja (Br).
B. GRANDIFLORA Nutt, Am phil sc tr,
 sr 2, 7:287. B 1:300, 613.
B. GREENEI G 12:58. B 2:453.
B. HASTATA Bth, bot Sulph 21. B 1:
 300. Z 2:12.
B. INCANA G 7:350. B 1:300.
B. LEMMONI G 17:206.
B. LINEARIFOLIA Klatt, in Abh Nat
 Ges Halle 15:325 (1882). = *Bigelovia*
Douglasii fide IK.
B. LINIFOLIA Eaton, bot King 137, t 15
 f 1-6. B 1:300. 2:453. Z 2:230. Cov 120.
B. LONGIFOLIA Wat, Am Nat 7:301.
 Cov 120.
B. MICROPHYLLA G, Pl Wright 1:85.
 B 1:300.
B. MOHAVENSIS G, Syn Fl 1(2):104.
B. MULTIFLORA K 7:49. Cur 1:138.
BRICKELLIA NEVINII A. Gray.
 G 20:297. Da 8.

Coleosanthus nevinii.

B. OBLONGIFOLIA Nutt, Am phil sc tr,

sr 2, 7:288. B 1:300.
 Variety **ABBREVIATA** G, bot King 137.
 P 4:125 as *Coleosanthus* ab.
 B. **OLIGANTHES** G, Pl Grigh 1:84. P 4:125.
 B. **RENIFORMIS** G, Pl Wright 1:86. Cov 119. = *Wrightii* fide IK.
 B. **WRIGHTII** G, Pl Wright 2:72. Dur & Hilg, Pac Ry R 5:3 (= *Californica* fide B 1:300).
 B. **BRISEGNOA** Remy, in C Gay, Fl Chil 5:291 (1849).
 B. **CHILENSIS** Remy, as above, 292. B 2:32 as *Oxytheca dedroidea*.
BRIZA L, Syst ed 1 (1735).
 B. **CANADENSIS** Nutt Gen 1:69 (not of suppl) = *Glyceria nervata* fide B 2:308.
 B. **ERAGROSTIS** L, sp pl 70. B 2:315 as *Eragrostis poaeoides* var. *megastachya* G. = *E. major* fide IK.
 B. **MEDIA** L, sp pl 70. B 2:316. Eu.
BRITTONASTRUM
 B. **LANCEOLATUM** M 1:4, based on *Cedronella cana* var. *lanceolata*.
 B. **RUPESTRE** M 1:4, based on *Cedronella rupestris*.
 B. **RIZOPYRUM** J. Presl, in Rel Haenk 280 (1830).
 B. **AMERICANUM** Link Hort Berol 1:160. B 2:306 as *Distichlis maritima*.
 B. **BOREALE** Presl, Rel Haenk 28. B 2:306 as *Distichlis maritima*.
 B. **SPICATUM** H & A bot Beech 403. B 2:306 as *Distichlis maritima*.
 B. **DOUGLASII** H & A bot Beech 404. B 2:314 as *Poa Douglasii*.
 B. **BROCCIA** Mauri ex Tenore, Cat 80 (1845).
 B. **DICHOTOMA** Mauri, lc. B 2:67 as *Simmondsia Californica*.

Genus BRODIAEA Smith.

Smith, Linn sc tr 10:2 t 1.
 Scape tortuous or twining from a depressed fibrous coated corm: lvs com 2, fleshy linear: umbel subtended by 3 or more thin spathaceous bracts: perianth tube thin, more or less inflected and angular or saccate, about equalled by seg: sta 6, the inner with a free lanceolate appendage on each side, sterile in some sp, the outer ones naked; anth basifixed: ovules 3-8 in each cell; sty persistent, with sh divergent stig: cap ovate to oblg, more or less attenuate above: sds angled, bk. Wild Hyacinth.
BRODIAEA BRIDGESII S. Watson. Wat 14:237. B 2:154.
BRODIAEA CALIFORNICA. Lindl ex Lem in Fl des Serres, sr 1, 5:429 b (1849). B 2:153 as *grandiflora*. var? major (cites Lindl, Hort sc tr 4: 84 f).
 B. **CAPITATA** Bth. Pl Hartw 339. Da 17. Ab 87. B 2:154. Par 268 t. P 1:266, San Benito Island. A 1:179 d. Br 1:217, Rosa (cites B. insularis Greene, as a synonym); Santa Inez mts.
 Variety **ALBA** Hort. A 1:180. W fls, otherwise as type.
BRODIAEA CANDIDA.
BRODIAEA COCCINEA A. Gray. G 7:389. Par 244. B 2:157 as *Brevortia* c.
BRODIAEA CONGESTA Sm.

Smith, Linn sc tr 10:3 t 1 (1811). B 2:153. Z 1:244. Par 268.
BRODIAEA CROCEA S. Watson. Wat 14:237. B 2:154.
BRODIAEA DOUGLASII S. Watson. Wat 14:237. B 2:154.
BRODIAEA EASTWOODIAE.
 Habit of B. *peduncularis*; umbel as in B. laxa; flowers pure white; introduced 1905.
BRODIAEA FILIFOLIA S. Watson. Wat 17:381. SBER (Vasey, Irish), SD Co (L. J. Gray). *Hookera filifolia* Greene.
BRODIAEA GRACILIS S. Watson. Wat 14:238. B 2:155.
BRODIAEA GRANDIFLORA Smith. Linn sc tr 10:2. Par 324 t. B 2:153. *Hookera coronaria* Salisb.
 Variety **BRACHYPODA** Torr, Pac Ry R 4:149. B 2:154 as B. *multiflora*.
 Variety **MAJOR** Bth, Pl Hartw 339. B 2:153.
 Variety **MINOR** Bth, Pl Hartw 340. B 2:153 as B. *minor*.
 Variety **MACROPODA** Torr, Pacific Ry R 4:149. B 2:153 as B. *terrestris* K.
 B. **GRANDIFLORA** Torr, in Stansb r 397. B 2:154 as B. *Douglasii*.
 B. **HOWELLII** Wat 14:301.
 Variety **LILACINA**.
 B. **IDA-MAIA** Jepson. Er 1:13, based on *Brevortia Ida-Maia*.
 B. **INSULARIS** Greene, Cal ac b 2:134, 413, Cruz. P 1:93, Mig. A 1:180 as *capitata*.
BRODIAEA IXIODES S. Watson. Wat 14:238. Par 158. B 2:155. Z 2:166. (Sims, bot mag t 2383 = *Leucocoryne ixioides*.)
 Variety **ERECTA**. Dwarf form, with odd, yellowish, fls, with almost black midvein.
 Variety **SPLENDENS**.
BRODIAEA LACTEA S. Watson. Wat 14:238. Par 160. B 2:156.
 Variety **LILACINA**. Stronger growing than the type: fls lilac-purple.
BRODIAEA LAXA S. Watson. Wat 14:237. Par 310 t. B 2:155. Z 1:144. A 1:184 as *Triteleia laxa* Bth.
BRODIAEA LEMMONIAE S. Watson.
BRODIAEA MINOR S. Watson. Wat 14:236. B 2:153. Da 17. Ab 87 as *Hookera minor*. Ha 67. Br 1:205, Cruz. Ore. Baja!
BRODIAEA MULTIFLORA Benth Bth 339. Par 268. B 2:154. Purdy, Z 1:10-2 d, maintains it as a good sp. Z 2:166.
 B. **ORCUTTII** Green, MS. SD! = *Hookera Orcuti* Greene, Cal ac b 1:138.
 B. **PALMERI** Wat 24:78. P 1:292 as *Triteleia* (?) *Palmeri*. Br 2:209, San Gregorio, San Borgia, Baja.
 B. **PARVIFLORA** T & G, Pac Ry R 2:125. B 2:154 as *multiflora*.
BRODIAEA PEDUNCULARIS S. Wat. Wat 14:237. B 2:155. Lake Co. S Ber Co (W. G. Wright).
 B. **PULCHELLA** Greene, Cal ac b 2:133 (1886). M 1:132 as *Dichelostemma pulchellum*. Wat 17:380.
BRODIAEA PURDYI.
BRODIAEA ROSEA.
BRODIAEA STELLARIS S. Watson.
BRODIAEA TERRESTRIS Kellogg.

K 2:6 Cur 1:148. B 2:153. Par 326.
 B. TORREYI Wood, Phil ac pr (1868)
 172. B 2:153 as *terrestris*.
BRODIAEA VOLUBILIS.
 Baker J Linn sc 11:378. Par 238 t. B
 2:156 as *Stropholirion californicum*.

Genus BROMUS Linnaeus.

Dill ex L, syst, ed 1 (1735).

Panicle open, with its slender rays at length pendulous, sometimes dense or racemed: spkt 5-many-fld, subterete or laterally compressed: gm unequal, sh'er than lowest floret, membranaceous, acute, awnless; lower 1-5, upper 3-9-nerved: lower palet rounded on back or somewhat keeled, 5-9-nerved, awned or bristle-pointed from a little below the mostly 2-cleft tip: upper palet bifid, with ciliate nerves: sta 3, rarely 2: scales entire: ova hairy at tip: sty inserted just below top and more or less lateral: stig feathery: grain oblg or linear, grooved, adherent to the palet. About 50 sp, largely Eu. Bromegrass.

B. ALTISSIMUS Pursh, Fl 2:728.

B. BARBATOIDES Beal, Grass NA 2: 614. A 1:347 as *Trinii*.

Variety **SULCATUS** Beal, as above, 615. A 1:347 as *Trinii* var. *palidiflorus*.
B. BREVIARITATUS Buckl, Phil ac pr 1862:98. B 2:321 as *Ceratochloa brevistaratus* Hook (cites Thurber, bot Wilkes exp 493; Wat, bot king 389). Parry, Wyo 16.

B. CANADENSIS Michx Fl 1:65. B 2: 320 as *ciliatus* L.

BROMUS CARINATUS H-A.

H & A, bot Beech 403. B 2:321 as *Ceratochloa brevistaratus* Hook. Ab 56. Ha 55.

Ann or bien; culm 5-8 dm hi; slightly pubescent at nodes; sheaths retrose-ly soft pilose; ligule 3-4 mm lg; lvs flat, mostly nar, 1-2.5 dm lg, 3-6 mm wide, sparsely pilose on both sides; panicle rather lax, 1-2.5 dm lg, lower branches 3, spreading or droopin, spkt compressed, 2.5-3 cm lg, 5 mm broad, 5-9-fld; empty gm lanceolate, acute, glab to slightly scabrous-pubescent, the first 3-5-nerved, 7-9 mm lg, second 5-7-nerved, 9-10 mm lg; fig gm puberulent or sh pubescent, 7-nerved, 13-16 mm lg, sh'ly 2-toothed at apex and tapering into an awn 7-10 mm lg; palea nearly equalling its gm, ciliate-pectinate on the keels.

Var. CALIFORNICUS Shear.

"Sheaths and blades nearly smooth; fig gm merely scabrous, otherwise as type."—Ab 57.

Bromus californicus Nutt in Phila. ac. herb.

Todos Santos bay, Baja California (Miss F. E. Fish). Potrero valley and San Diego, California. (Orcutt 51a).

Var. HOOKERIANUS Shear.

Bromus hookerianus Thurb in Wilkes U. S. Exp. Exped 17: 493 (1874).

Ceratochloa grandiflora Hook Fl. Bor. Am. 2: 253 (1840).

Bromus virens Buckl Phila. ac. pr. 1862: 98.

Bromus nitens Nutt in Phila ac. herb. California, Washington, Idaho.

BROMUS CILIATUS L.

L, sp pl 76. Da 19. B 2:320. Br 1:205,

Cruz. Ar (Toumey). NY. Minn. Newfoundland to Manitoba.

B. DEPAUPERATUS J. Presl, Rel Haenk 1:263. B 2:320. Beal, Grass NA 2:613. Parish, Z 5:110, not SD.

BROMUS ERECTUS Huds.

Huds, Fl Angl, ed 1. 39. Eu, Asia. Ti-juana, Baja (Or 511).

B. HOOKERIANUS Thurber, Bot Wilkes Exp 2:493. B 2:321 as *Ceratochloa grandiflora* Hook. Da 19. Br 1:205, Cruz; 218, Rosa.

BROMUS HORDEACEUS L.

L, sp pl 77. Ab 53. A 1:44 d.

Bromus mollis L, Sp pl ed 2, 1:112 (1762). *Serrafalcus mollis* Parl Fl Ital 1:395 (1848).

BROMUS INERMIS Leyss.

Beardless (also called smooth, Hungarian, and awnless) brome grass. Eu; widely naturalized in the western US, where it is extensively cultivated.

B. MOLLIS L sp pl, ed 2, 112. Eu, Af, Asia. A 1:44 as *hordeaceus*, Z 1:183. Da 19, Er 1:101, Monica (Hasse).

B. MADRITENSIS Cav ex Kunth, En 1: 419. = *maximus*.

B. MADRITENSIS L, Cent pl 1:5; Amoën ac 4:265. Eu, Af, Ab 54. Z 1:183.

An; cu 3-7 dm hi, smooth; sheaths smooth or lower sparsely pubescent; ligule about 2 mm lg; lvs linear, puberulent or nearly smooth, 5-15 cm lg, 2-4 mm wide; panicle erect, 5-12 cm lg, lower branches 2-4, 1-3 cm lg, unequal, spreading in fl, slender; spkts 3-4 cm lg, nearly smooth or scabrous-puberulent, 7-11-fld; empty gm lanceolate, acuminate, the first 1-nerved, 9-12 mm lg, second 3-nerved, 13-16 mm lg; fig gm linear-lanceolate, 15-18 mm lg, glab or scabrous; awn stout, tapering, rough, somewhat curved, 16-22 mm lg; palea pectinate-ciliate on keels, equaling insertion of awn.

B. MARGINATUS Nees. Ab 56. Ha 55.

Per; cu 6-12 dm hi, mostly puberulent to pubescent; sheaths pilose-pubescent; ligule 3-3.5 mm lg; lvs rather sparsely pilose-pubescent thruout and scabrous, 1.5-2.5 dm lg, 6-12 mm wide; panicle erect, 1-2 dm lg, its lower branches 2-4, erect or spreading in fl, unequal, lowest about 7 cm lg and bearing 2 spkts; spkts 2.5-4 cm lg, 5-7 mm wide, laterally compressed, 7-9-fld erect or ascending; empty gm scabrous to scabrous pubescent, the first subacute, 3-5-nerved, 7-9 mm lg, second 5-7-nerved, 9-11 mm lg; fig gm coarsely pubescent, acute, 11-14 mm lg; mostly 7-nerved, teeth very sh, subacute; awn 4-7 mm lg; palea ciliate-pectinate on keels, equaling its gm or nearly so.

Variety **LATICUS** Shear, DA agros b 23: 55 (1900). Ha 55.

Variety **SEMINUDUS** Shear, DA, agros b 23:55 (1900). Ha 55.

BROMUS MAXIMUS Desf.

Desf, Fl Atl 1:95 t 26. B 2:319. Z 1: 183. Da 19. Bth, Ill Brit Fl f 1214. Reicheub, Ic Fl Germ t 142. Da 19, Er 1:110, Monica (Hasse). Guad.

Cu 12-18' hi; lvs about 3' wide, and with the sheaths dark g and more or less hairy: panicle erect, 5-8' lg, with few erect and at length nodding 1-fld

branches; spkt including awns about 3' lg, 5-8-fld; gm hyaline except the nerves, the upper nearly equaling the floret; lower palea very rough, about 10" lg, the teeth 2" and awn about 2' lg. So Eu, SF, Ar, Wash.

McClatchie, *Erythraea* 2:78, Cat. Pt Loma, SD (Or 1059). B. *rigidus* Roth.

Type from northern Africa. Stanford University (C. Ritter 305), California. Var. *GUSSONI* Parl.

"Ann; cu erect or ascending, 4-7 dm hi, smooth; sheaths pilose-pubescent; ligule 3-4 mm lg; lvs linear, 2-3 dm lg, 3-5 mm wide, pilose on both sides; panicle somewhat drooping, secund, lax, 1-2 dm lg; lower branches 2-4, 3-5 cm lg; spkt 5-7-fld, 3.5-5 cm lg; empty gm lanceolate, acuminate, smooth, first 15-20 mm lg, 1-nerved, second broader, 25-30 mm lg, 3-nerved; fig gm 5-nerved, 25-30 mm lg, strongly scabrous, 2-toothed, teeth hyaline, 3-4 mm lg; awn stout, 3.5-4.5 cm lg, rough; palea somewhat sh'er than its gm. Com along streets and in waste places."—Ab 54.

Most So Cal plants probably belong to this var.

Bromus gussoni Parl Rar. Pl. Sic. 2: 8 (1840).

Bromus sterilis Gus Fl. Sic. Prod. Suppl. 1: 27 (1832).

Larger than the type, 4-7 dm. tall, larger and more lax panicle, 1-2 dm. long, with the upper part somewhat drooping.

Arizona, California, Washington. Introduced. San Diego, California (Or-

BROMUS ORCUTTIANUS Vasey.

Vasey, bot gaz 10:223 (1885). Ha 55. A 1:45 fdr. Shear, DA, agros b 23:42 (3 JI 1900). Ab 55; Gabriel; SBER ints.

Var. *GRANDIS* Shear.

Shear, D-A agros b 23:43. Ha 55.

"A very stout, erect per 14-15 dm hi, very leafy below. Sheaths, lvs and cu pubescent thruout. Panicle about 2 dm lg and nearly as broad at base at maturity when the branches are spread more or less horizontally. Spkts pubescent thruout. Its distinguishing characters are its size and pubescence. In other respects the plant is like the species. Type No. 472, collected by C. R. Orcutt at La Malte [La Monte, near El Cajon], SD. The only specimen seen."—Shear, lc. Coll 25 Je 1883 and distributed as *B. ciliatus* L.

B. PORTERI

Variety *ASSIMILIS* Davy, Cal Univ pub, bot 1:55, based on var. *lanatipes* Shear, D-A agros b 23:37 (1900), in part. Mt Brome. A 1:347 d.

Variety *LANATIPES* Shear. A 1:347 as var. *assimilis*.

B. PILOSA Z 1:59.

B. PUBESCENS Muhl, in Willd En 120. B 2:320 as *ciliatus* L.

B. PURGANS L, sp pl 76. B 2:320 as *ciliatus*. Hook. Fl 2:252 (= *ciliatus* in part fide B 2:320).

B. RACEMOSUS L, sp pl ed 2, 114. B 2:320. Eu.

BROMUS RICHARDSONI. Link. Hort Berol 2:281.

Per; 6-13 dm hi, smooth; sheaths smooth below or sparsely pilose, pilose at throat; ligule 1-2 mm lg; lvs linear-lanceolate, 15-25 cm lg, 5-12 mm wide, com scabrous above and glab beneath; panicle drooping, 15-25 cm lg; spkts drooping, terete, acuminate, becoming oblq, lanceolate and compressed, 2-3 cm lg, 6-11-fld; empty gm smooth, the 1st acutish, 8-10 mm lg, the 2d 9-12 mm lg; fig gm obtuse, 7-nerved, 12-15 mm lg, appressed ciliate-pubescent nearly to apex; awn straight, 3-5 mm lg; palea slightly sh'er than its gm.

Ab 55.—"Frequent on wooded slopes and in canyons in all our mts and foothills."

B. RIGIDUS Reichenb Ic Fl Germ 1:31 no. 1586. B 2:319 as *rubens*.

BROMUS RUBENS L.

L. Cent pl 1:5. Da 19, Er 1:101, Monica (Hasse). Z 1:183. B 2:319. Eu, Ore.—Ab 54. Port Ballona; SBER; etc.—Kansas, Mass.

Ann; cu about 2-5 dm hi, erect, puberulent above; sheaths pubescent; ligule 1-2 mm lg, lvs 3-15 cm lg, pubescent on both sides; panicle erect, compact, com p'lish, 4-7 cm lg; spkts mostly 7-11-fld, 2-2.5 cm lg; empty gm acuminate, pubescent or scabrous, 1st nar, 1-nerved, 7-9 mm lg, 2d 3-nerved, 10-12 mm lg; fig gm 13-16 mm lg, lanceolate, acute, 1-nerved, scabrous or appressed scabrous-pubescent, teeth 4-5 mm lg; awn 18-21 mm lg; palea lg ciliate-pectinate on the keels.

B. SCHRADERI Kunth, En 1:416. B 2:322 as *Ceratochloa unioides* (vide *Bromus* u.)

B. SECALINUS L, sp pl 76. Eu. Ab 53. B 2:319. Z 1:183.

Ann; cu 3-7 dm hi, smooth thruout or somewhat pubescent on nodes; sheaths smooth or sometimes sparsely pilose-pubescent; lvs 1-2 dm lg, coarsely and sparsely pubescent above, smooth beneath; panicle 8-18 cm lg, erect, the upper part drooping in fr; spkts-ovoid-lanceolate, 10-18 mm lg, 6-8 mm wide in fr; empty gm smooth, obtuse, 1st 4-6 mm lg, 3-5-nerved, 2d broader, 6-7 mm lg, 7-nerved; fig gm 7-nerved, 6-8 mm lg, elliptic, obtuse, smooth or scabrous; awn undulate, 3-5 mm lg; palea equaling the gm.

B. STERILIS L sp pl 77. Eu, Asia. B 2:319.

B. STRIGOSUS Bleb, Fl Taur Cauc 3:81, B 2:324 as *Triticum strigosum* Lessing.

B. SUBULATUS Griseb, in Ledeb Fl Ross 4:358. = *Melica acuminata* fide B 2:305.

B. TRINII E Desv in C. Gay, Fl Chil 6: 441 (1853). Chili. A 1:37 d. Ab 53, Pasadena, SD, Colo, Ut, Baja.

Variety *FALLIDIFLORUS* Desv. A 1:347. Ab 54.

A more robust and larger plant, 6-12 dm hi, with a much elongated panicle mostly 2-4 dm lg; with branches mostly 6-12 at the lower whorls, weak and spreading; lvs broadly linear lanceolate, smooth or somewhat sparsely pilose-pubescent, as are also the sheaths. Type from the Andes of southern Chili. Chollas!

BROMUS UNIOLOIDES HBK.

Nov Gen et sp 1:151. A 1:45 d. Ab 55.
B 2:322 as *Ceratochloa* u.

Variety **HAENKEANUS** Shear. Ab 56.

Sm'r than type, 1.5-5 dm hl; sheaths retrorsely pilose; lvs linear, nar, retrorsely pilose-pubescent on both sides; panicle erect, 5-10 cm lg.

B. **VIRENS** Buckl. Phil ac pr 1863:98. B 2:321 as *Ceratochloa grandiflora*.

B. **WILDENOWII** Kunth Rev Gram 1: 134. B 2:322, as *Ceratochloa unioloides* (= *B. unioloides*).

BROUSSONETIA L'Herit ex Vent Tabl Reg veg 3:547 (1799).

BROUSSONETIA PAPYRIFERA Vent.

Vent, as above. B 2:63. Malaya.

BRUCEA Schu. (Moss).

B. **BOLANDERI** Lesq. B 2:360.

B. **LONGICOLLIS** Z 1:94.

BRUNELLA R & P, Prod 71 t 12.

BRUNELLA Tourn, ex L, Syst ed 1 (1735). = *Prunella* L.

BRUNELLA VULGARIS Linn.

Ha 108. Parry, Wyo 17. Leeds, W 5:22.

B 1:604. 2:477, Humboldt Co. Par 328.

Simple stems ending in a dense spike of violet fls.

BRYANTHUS SG Gmel, Fl Sib 4:133 t 57 f 3 (1769).

B. **ALEPTICUS** G 7:368. M 1:1 as *Phyllodoce Aleutica*.

BRYANTHUS BREWERI A. Gray.

G 7:367. Z 2:158. Par 252 t. B 1:456.

2:461. M 1:1 as *Phyllodoce Breweri*.

SBer mts (Parish 439).

B. **EMPETRIFORMIS** G 7:367. Z 2:232.

Parry, Wyo, 13. B 1:456.

B. **GIBLINI** D Don, in Edinb n Phil J 17: 160 (Je 1834). Sib. B 1:456.

BRYUM Dill. (Moss).

B. **ALEICANS** Bridel. B 2:392.

B. **AECTICUM** B & S. B 2:392.

B. **ARGENTEUM** L. B 2:395.

B. **ATROPURPUREUM** Weber & Mohr.

B 2:394. Eu, Af, Nev.

B. **ATWATERIAE** Muell, Fl 58:76. B 2:396. Yosemite, Ore, Vancouver Island.

B. **BAUERI** Hampe. B 2:395 as *occidentale*.

B. **BIGELOVII** Sulliv. B 2:395.

B. **BILLARDERII** B & S. B 2:394 as *provinciale*.

B. **BIMUM** Schreb. B 2:394. Nev, Wash, Eu, So Am. No Atlantic states.

B. **BOLANDERI** Lesq. B 2:390. Foot of Mt Dana.

B. **CAESPITICUM** L. B 2:394. Nev, Wash, Cal, Eu, So Am.

B. **CALIFORNICUM** Sulliv. B 2:395. SF.

B. **CALOPHYLLUM** R Br. B 2:393.

B. **CANARIENSE** Schimp. B 2:394 as *provinciale*.

B. **CAPILLARE** L. B 2:394.

B. **CERNUUM** B & S. B 2:392. Eu, Nev.

B. **CIRRHATUM** Hornsch. B 2:393. Eu, Cal.

B. **COMMUTATUM** B 2:391.

B. **CRUDUM** Schreb. B 2:391.

B. **CUCULLATUM** Schw. B 2:391.

B. **DUVALLII** Voit. B 2:396. Eu, Nev, Cal, Wash.

B. **FONTANUM** Swartz. B 2:401 as *Bartramia* f.

B. **HENDERSONI** Z 1:63.

B. **INCLINATUM** B & S. B 2:392. Eu, Nev, Yosemite.

B. **INTERMEDIUM** B & C. B 2:393. Eu, Nev, NM, Cal.

B. **LATIFOLIUM** B & S. B 2:393 as *Calophyllum*.

B. **LONGICOLLUM** Swartz. B 2:390. Wash.

B. **LUDWIGII** B & S. B 2:391 as *commutatum*.

B. **MACOUNII** Austin. B 2:396, as *Atwateriae*.

B. **MENZIESII** Hook. B 2:397 as *Mnium* M.

B. **MINIATUM** Lesq. B 2:396. Yosemite.

B. **NUDICAULE** Lesq. B 2:390. Mt Dana, Cal.

B. **NUTANS** Schreb. B 2:391. Eu, Mt Dana, Cal, Ut.

Variety **BICOLOR** B & S. Mt Dana, Cal. Eu.

B. **OBCONICUM** Hornsch. B 2:395. Eu. S Cruz mts.

B. **OCCIDENTALE** Sulliv. B 2:395.

B. **OEGANUM** Sulliv. B 2:394. Ore.

B. **PALLENS** Swartz. B 2:395. Ore.

B. **PALLESCENS** Schw. B 2:394. Eu. Wash.

B. **PALLUSTRE** Swartz. B 2:400 as *Aulacomnium* p.

B. **PENDULUM** Schimp. B 2:392 as *Cernuum*.

B. **POLYMORPHUM** B & S. B 2:390. Eu. Ore. Cal.

B. **PROVINCIALE** Philib. B 2:394. Eu. Cal.

B. **PSEUDOTRIQUETUM** Schw. B 2:396. Cal, Ohio, Eu.

B. **PUNCTATUM** B 2:396 fide index.

B. **PYRIFORME** L. B 2:390, as *Leptobryum*, p.

B. **SCHLICHERI** Schw. B 2:397 as *turbinatum*.

B. **SUBBOTUNDUM** Bridel. B 2:394. Eu. Yosemite.

B. **TORQUESCENS** B & S. B 2:393. Eu. Af. So Am. NY. Tex. Cal. Australia.

B. **TOZEII** Greb. B 2:392. Eu. SF.

B. **TURBINATUM** Schw. B 2:396. Variety **LATIFOLIUM** B & S. B 2:396, Colo. Cal.

B. **ULIGINOSUM** B & S. B 2:393 d, 395. Eu. Cal.

B. **WAHLENBERGII** Schw. B 2:392 as *albicans*.

B. **WARNEUM** Bland. B 2:392. Eu. Cal.

B. **BUCKLEYA** Torr, Am J sci 45:170.

B. **DISTICHOPHYLLA** Torr as above. Z 1:95.

BUDA Adans Fam 2:507 (1763). A 1: 157 as *Tissa*. = *Spergularia* fide IK.

B. **MARINA** Dum Fl Belg 110. = *S. marina* fide IK.

B. **MEDIA** Dum, lc. = *S. marina* fide IK.

B. **RUBRA** Dum, lc. = *S. rubra* fide IK.

BULBOSTYLIS DC, Prod 5:358.

B. **ANNUA** Nutt, Phil ac J, sr 2, 1:179 (1847). B 1:409 as *Psathyrotes annua*.

B. **CALIFORNICA** T & G, Fl 2:79. B 1:300 as *Brickellia* C.

B. **MICROPHYLLA** Nutt, Am phil sc tr, sr 2, 7:286 (1841). B 1:300 as *Brickellia* m.

BULLIARDA DC, Philom sc b 3: n49, p 1. (1801). = *Tillaea* fide IK.

B. **AQUATILIS** DC as above, 2. A 1:49 as *Tillaeastrum aquaticum*.

BUPHTHALUM L, syst ed 1 (1735).

B. **SAGITTATUM** Pursh, Fl 2:564. B 1:

- 348, as *Balsamorhiza sagittata* Nutt.
BURRIELIA DC Prod 5:663. = *Baeria*.
B. ANTHEMOIDES G, bot Mex bound 97.
B. CHRYSOSTOMA T & G, Fl 2:379. *B* 1:375 as *Baeria* c.
B. FREMONTII Bth Pl Hartw 317. *B* 1:377 as *Baeria* f.
B. GRACILIS DC Prod 5:664. *B* 1:376 as *Baeria*.
B. HIRSUTA Nutt, Am phil sc tr, sr 2, 7:381. *B* 1:375 as *Baeria chrysostoma*.
B. LANOSA G, Pac Ry R 4:107. *B* 1:379 as *Actinolepis lanosa*.
B. LEPTALEA G 6:546. *B* 1:375. = *Baeria* l fide IK.
B. LONGIFOLIA Nutt, Am phil sc tr, sr 2, 7:380. *B* 1:376 as *Baeria tenerrima*.
B. MARITIMA G 7:358. *B* 1:377 as *Baeria* m.
B. MICROGLOSSA DC 5:664. *B* 1:375.
B. NIVEA DC Eaton, bot king 174. *B* 1:379 as *Actinolepis* n. = *Eatonia* n, fide IK.
B. PARVIFLORA Nutt, Am phil sc tr, sr 2, 7:381. *B* 1:376 as *Baeria tenerrima* (= *B. gracilis* fide IK).
B. PLATYCARPHA G, bot Mex bound 97. *B* 1:376 as *Baeria* p.
B. TENERRIMA DC Prod 5:664. *B* 1:376 as *Baeria* t.
BURSA [Weber, in] Wigg Prim Fl Hols 47 (1780). *A* 1:117 as *Capsella*.
B. ASTORIS Weber, lc. = *Capsella Bursa-Pastoris*.
B. BURSA-Pastoris Britton. *Ab* 175. *A* 1:117 as *Capsella* B-P.
B. DIVARICATA OK. *A* 1:118 as *Capsella* divaricata.
B. PASTORIS Wigg, lc. *A* 1:117 as *Capsella* B-P.
BUTNERIA Duham, Arb 1:113, t 45 (1755). = *Calycanthus* fide IK.
B. OCCIDENTALIS Greene., *Er* 1:207 based on *Calycanthus occidentalis* H & A.
BUXBAUMIA Haller (Moss).
B. APHYLLA Haller. *B* 2:405. *Eu*. Asia. Cascade mts.
BUXUS L, syst ed 1 (1735).
B. CHINENSIS Link, *En* 2:386. *B* 2:67 as *Simmondsia californica*.
CACALIA L, sp pl 834 (1753). = *Seneccio* fide IK.
C. ATRIPLICIFOLIA Raf, *New Fl* 4:79 (1836). *P* 3:182 as *Mesadenia* a.
C. DIVERSIFOLIA T & G, Fl 2:435 (1843). *P* 3:182 as *Mesadenia* d.
C. FLORIDANA G 19:52 (1883). *P* 3:183 as *Mesadenia* f.
C. LANCEOLATA Raf, lc. *P* 3:183 as *Mesadenia* l.
C. OVATA Raf, lc. *P* 3:182 as *Mesadenia* o.
C. REINFORMIS Raf, lc. *P* 3:182 as *Mesadenia* r.
C. TUBEROSA Nutt, *Gen* 2:138 (1818). *P* 3:183 as *Mesadenia plantaginea*.
CAKILE L, syst ed 1 (1735).
C. FUSIFORMIS P 3:346.
CALAIS DC 7:85 (1739). = *Microseris* fide IK.
C. APHANTOCARPHA G 6:552. *B* 1:425 as *Microseris* a.
C. BIGELOVII G Pac Ry R 4:113. *B* 1:426 as *Microseris* B.
C. BOLANDERI G 7:365 *B* 1:425 as *Microseris leptosepala*.
C. CLEVELANDI Greene, *Cal ac b* 2:153 (49 sub C. Parryi). *SD*. *Z* 1:126, "probably mature Parryi."
C. CLCLOARPHA G Pac Ry R 4:115 t 18. *B* 1:426 as *Microseris* c.
Variety *ERIOCARPHA* G. *B* 1:426.
C. DOUGLASII DC Prod 7:85. *B* 1:426 as *Microseris* D.
C. EROCARPHA G, 6:552. *B* 1:426 as *Microseris cyclocarpha* var. *eriocarpha* G.
C. GLAUCA
Variety **PROCERA** G 7:364. *B* 1:425 as *Microseris lacinata* var p.
C. GRACILOBA K 5:48. *Cur* 1:140 as *Microseris Bolanderi* (*B* 1:424 as *M. major* var *lacinata*).
C. KELLOGGII Greene, *Cal ac b* 2:49. *Z* 1:126, "probably *M. Lindleyi*."
C. LACINIATA G, Pac Ry R 4:113. *B* 1:424 as *Microseris* l. (*G* 8:392 coll Hall no 313 = *M. leptosepala* fide *B* 1:425).
C. LINDLEYI DC Prod 7:85. *B* 1:426 as *Microseris* L. *A* 1:25 (as *Uropappus* L).
C. LINEARIFOLIA DC Prod 7:85. *B* 1:427 as *Microseris* l. Greene, *Cal ac b* 2:405, Cruz, SD, "oft more than 2° hl." *A* 1:251, 252 as *Uropappus* l.
C. MACROCHAETA G, Pl Fend 112. *B* 1:427 as *Microseris* m. *Z* 1:126, "probably young *linearifolia*."
C. MAJOR var. *lacinata* G Pl Fend 113. *B* 1:424 as *Microseris major* var. l.
C. NUTANS G Pac Ry R 4:112. *B* 1:424 as *Microseris* n.
C. PARRYI G, Pac Ry R 4:122. Greene, *Cal ac b* 2:49, 153. *B* 1:425 as *Microseris* p. G, Mex bound 104. *Z* 1:126 as "*M. Lindleyi*."
C. PLATYCARPHA G, Pac Ry R 4:113. *B* 1:426 as *Microseris* p.
C. PLURISETA Greene, *Cal ac b* 2:405, Cruz. *P* 1:30. *A* 1:1 fdr. *Z* 1:127, "probably *M. Lindleyi*."
C. SYLVATICA G, Pac Ry R 4:114. *B* 1:424 as *Microseris* s.
C. TENELLA G, Pac Ry R 4:114. *B* 1:425 as *Microseris aphantocarpa* var. *tenella*.
CALAMAGROSTIS Adans, *Fam* 2:31 (1763).
Spkts in a contracted, spk-like, or open panicle with or without a bristle-like or hairy rudiment opp palet; empty gm about equal, awnless, membranaceous or chartaceous; fig gm com with a ring of hairs surrounding its base, or a tuft on each side, and com bearing an awn on back; palet 2-nerved, 2-kneeled: spkts com larger than in *Agrostis*.
C. ALBICANS Buckl, *Phil ac* pr 1862: 92. *B* 2:282 as *C. aleutica* Trin.
C. ALEUTICA Trin, Bong, *Veg* Sitich 171. = *Deyeuxia* a fide IK. Vasey, *CNH* 3:80.
C. BOLANDERI Thurber, *B* 2:280. Vasey, *CNH* 3:79.
C. BREWERI Thurber ex Bolander, *Cal agr sc tr* 1864-5: 136. *B* 2:280. = *Deyeuxia* *Breweri* fide IK. Vasey, *CNH* 3:79.
C. CANADENSIS Beauv *Agr* 157 nomen. Torrey, *Fl NY* 2:444 t 150. *G* 4:77. *B* 2:279. = *Deyeuxia* c fide IK. Parry, *Pl Wyo* 16.
C. COLUMBIENSIS Nutt ex G, *Phil ac*

- pr 1862: 334. B 2:279 as Langsdorffii.
C. CRASSIGLUMIS Thurber, B 2:281.
C. DENSUS Vasey, A 1:45 fdr, 46.
C. DESCHAMPSIOIDES Trin, lc Gram 3 t 354. B 2:280.
C. KAELEBRIOIDES Vasey, A 1:46 fdr.
C. LANGSDORFFII Trin, Gram Unif 225 t 4 f 10. B 2:279.
C. LAPPONICA Trin. Hook, Brit Fl, ed 4, 34. Parry, Pl Wyo 16.
C. LONGIFOLIA Hook, Fl 2:241. Br, Pl Colo 230.
C. MEXICANA Nutt, Gen 1:46. B 2:279 as canadensis.
C. ORCUTII Vasey, ined. CD!
C. OREGONENSIS Buckl, Phil ac pr 1862: 92. B 2:279 in part as Langsdorffii.
C. PURPURASCENS R Br, App Richards Voy 3. B 2:282 as sylvatica.
C. ROBUSTA Franch & Sav En Pl Jap 2:600. Japan. Vasey, ined. CD! (Probably error).
C. RUBESCENS Buckl, Phil ac pr 1862: 92. B 2:280 as deschampsoides?
C. STRICTA Trin, Gram Unif 226. B 2:281. Eu. Wis. Vt. Can. Cal.
C. STRIGOSA Bong. G 4:78. B 2:281. Alk.
C. SYLVATICA DC, Fl Fr 5:253. B 2:282. Cal. Ore.
C. VARIA Boland Cat 34. B 2:280 as Bolanderi.
CALAMINTHA Lam, Fl Fr 2:393 (1778). A 1:364 d.
C. CHANDLERI Br. A 1:159 fdr.
C. ILICIFOLIA G 8:368. B 1:596, 2:477. = *Acanthopodia* i.
C. CLINOPODIUM Bth, in DC Prod 13: 233. Z 2:233.
C. MIMULOIDES Bth, Pl Hartw 331. A 1:85 d. B 1:596.
C. PALMERI G 11:100. A 1:364 d. B 1:596. Guad.
CALANDRINIA HBK Nov Gen et Sp 6:77 t 526 (1823). A 1:163 d.
C. AMBIGUA Howell. A 1:158 d.
C. BREWERI Wat 11:124. A 1:163 d. B 1:74. Z 2:121. Br 1:202, Cruz; 225.
C. CAULESCENS HBH. A 1:158 d. Par 218.
 Variety **MENZIESII** G, A 1:158. Ab 140. Br, Z 1:113, Cat.
C. ELEGANS Spach, Hist Veg Phan 5: 232. = *Menziesii* fide IK (*Caulescens* var M, fide Ab 141). Da 3.
C. LEANA Porter, bot gaz 1:49. B 2:435.
C. MARITIMA Nutt, T & G Fl 1:197. A 1:158 d. B 1:75. Br 1:202 Cruz. P 1: 263 (San Benito Island), 239 (San Bartolome bay, Baja).
C. MENZIESII Hook, Fl 1:223. T & G Fl 1:197. B 1:74. Greene, Cal ac b 2: 392, Cruz. A 1:158 as *Caulescens* var. *Menziesii*.
 Variety **MACROCARPA** G, Cal ac pr 3: 102. B 1:74 as C. *Breweri*.
C. NEVADENSIS G 8:623. B 1:75.
C. PYGMAEA G 8:623. B 1:75.
C. SESUVIOIDES G 22:278. A 1:158 as *ambigua*.
C. SPECIOSA Lindl, bot reg t 1598. B 1:74 as *Menziesii*.
C. SPINESCENS Torr ex B, index = *Talinum* s.
CALLIACHRIS T & G, Bost sc nat hist J 5:110 (1844). = *Laylia*.
C. FREMONTII T & G, lc. = *Laylia* F fide B 1:370.
CALLICHOEA F & M, Ind Sem Hort Pet 2:31 (1835). = *Laylia*.
C. PLATYGLOSSA F & M, lc. = *Laylia* p fide B 1:370.
CALLIGLOSSA H & A, bot Beech 356 (1840). = *Laylia*.
C. DOUGLASSII H & A, lc. B 1:370 as *L. Calliglossa* G.
CALLIPRORA Lindl, bot reg t 1590 (1833). = *Brodiaea* fide IK.
C. LUTEA Lindl, lc. B 2:155 as *B. ixoides*.
C. AURANTIA K 2:20. Cur 1:148 as probably a stout form of *Brodiaea gracilis* (B 2:155 as *B. ixoides*).
CALLITRICHACEAE A 1:284 d.
CALLITRICHACEAE L, syst, ed 6, 82 (1748). A 1:284 d.
C. AUTUMNALIS L, Fl Suec ed 2, n 4. B 2:77. Eu. Asia, No Am.
C. BOLANDERI Hegelm, Verh bot Ver Brandenb 10:116 (1868). B 2:77.
C. LONGIPEDUNCULATA Morong. A 1:87 fdr. Z 2:298.
CALLITRICHACEAE MARGINATA Torrey. Pac Ry R 4:135. A 1:285 d. Ab 237. B 2:76, 483. Da 6.
 Soldiers' Home (Hasse). Near SD in shallow pools on the mesa.
 Peculiar to the Pacific coast, from Arizona to California. Also attributed to Chili.
C. SEPUITA Wat 14:298. B 2:77.
C. STENOCAERPA Hegelm in Verh bot Ver Brandenb 10:114 (1868). B 2:77 as a form of *verna*.
CALLITRICHACEAE VERNALIS Linn. Fl Suec ed 2, 2, no 3. B 2:77. Z 2:351. A 1:285 d. Eu. Asia. So Am. Cal.
 Canada; nearly all parts of the United States; South America; Europe and Asia.
Genus CALOCHORTUS Pursh.
 Pursh, Fl 1:240 (1814).
 Sts from membranous-coated corms, with few nar radical or cauline lvs and showy w, or brilliantly colored fls borne terminally on st or branches or in an umbellate fascicle; perianth decid, the seg distinct and more or less concave; Sep lanceolate, g'ish or sometimes colored. Pet for the most part broadly cuneate-obovate and com with a conspicuous gland or pit near the base; Sta 6, on the base of seg; Ova triquetrous; stig sessile, recurved, persistent; Cap elliptical or oblg, membranous, 3-angled or winged, com septically dehiscent; Sds num, in 2 rows in each cell, somewhat flattened. *Mariposa* Lily.
C. ALBUS Dougl ex Bth in Mound & Hemsl Bot t 98. Par 148 t. Br 1:205, Cruz; 217, Rosa; 226 (fls w on mainland, light p on Cruz). Da 17. Ab 89. Z 2:78. B 2:172. A 1:180 d.
CALOCHORTUS AMABILIS. Purdy, A 1:180 fdr. Par 148 t.
CALOCHORTUS AMOENUS. Greene, P 2:71. Z 2:78. = *C. albus* fide K Br, Z 4:103.
 "Near *C. pulchellus*, of the same size

and habit, pet more elongated, the cilia longer, more lax and scarcely carried above the middle of the organ, the whole fl of a deep r p."—P 2:71 mts east of Visalia, Cal (Patterson).

CALOCHORTUS APICULATUS Bak. Linn sc J 14:305. B 2:174. Idaho.

C. AUREUS Wat, Am nat 7:303. A 1:180 fdr. B 2:176.

CALOCHORTUS BARNARDI Dougl. ex Steud Nom ed 2, 1:260.

CALOCHORTUS BENTHAMII Baker. Linn sc J 14:304. B 2:173. Par 134.

CALOCHORTUS BONPLANDIANUS Sht Syst 7:1532. Mex.

CALOCHORTUS CAERULEUS S. Wat. Wat 14:263. B 2:173.

C. CATALINAE Wat 14:268. A 1:180 d. Ab 90. B 2:177. Par 308. Z 1:146.

CALOCHORTUS CITRINUS Baker. Baker, bot mag t 6200. B 2:174 as Weedii.

C. CLAVATUS Wat 14:265. A 1:181 d. B 2:175. Ab 90. Da 17. Par 154.

Variety **EL DORADO**. A 1:181. Variety **VENTURA**. A 1:181.

CALOCHORTUS CONCOLOR.

Purdy, Cal ac pr, sr 3, bot 2:135 (1901), C. luteus concolor Baker, Gard 48:103 t (1895). Ha 67. "Maldejojo."

C. DAVIDSONI Rose? Da 17.

CALOCHORTUS DOUGLASIANUS Sht. **CALOCHORTUS DUNNII**.

Purdy. A 1:181 fdr.

CALOCHORTUS ELEGANS Pursh.

Fl 1:240. B 2:173. Dougl, Hort sc tr 7:278 t 9 f B. (Hook, f, bot mag t 5976 = Maweanus.)

Variety **NANUS**.

Variety **SUBCLAVATUS** Baker Linn se J 14:305. B 2:174 as C. nudus.

C. EURYCARPUS Wat, Bot King 348. Parry, Pl Wyo 18. B 2:175 as nitidus.

C. EXCAVATUS P 2:71. K Br, Z 4:103 as Nuttallii.

"Resembling C. invenustus, but the bracts ovate-lanceolate, scarious almost to the striate-veined middle portion, their acuminate tips recurved: pet w shaded with lurid p above, but dark p below and about the broad obovate hairy gland which is deeply impressed, appearing like a y saccate body on the outside of the pet: sta as in C. invenustus, but anth dark maroon."—P 2:71. Inyo Co., Cal. (Shockey 427).

CALOCHORTUS FLAVUS Schult. Schult f. syst 7:1535 Mex.

C. FLEXUOSUS Wat, Am nat 7:303. A 1:181 fdr. B 2:176. Z 2:951.

CALOCHORTUS FUSCUS Schult.

C. GLAUCUS Regel, Gartenfl 1875:260 et act Hort Petrop 3 (2):285. =caeruleus? fide B 2:173.

CALOCHORTUS GREENEI S. Watson. Wat 14:264 (1879). B 2:177. Z 2:201.

CALOCHORTUS GUNNISONI S. Watson 232. Ckll, W 6:135 (cites a fungus on it). Parry, Pl Wyo 6.

Variety **IMMACULATUS** Ckll, W 5:17. 6:135.

Variety **MACULATUS** Ckll, W 5:17. 6:135.

Variety **PURUS** Ckll, W 5:17. 6:135.

CALOCHORTUS HOWELLII.

Ab 91 (Mt Santiago, Santa Ana mts). Ha 67 ("= variety of splendens probably"). Mohave.

CALOCHORTUS KENNEDYI Porter. Porter, bot gaz 2:79. B 2:175. Z 1:146.

Mohave. Ar!

Com stout, 4-18' hi, glau, 2-4-fid; pedicels, oft sh and stout: lvs sh'er than st: sep broad, scariously margined,

orange within with a p spot at base, about equalling the fan-shaped pet,

which are 12-15' lg, of a uniform clear r'dish orange, the round oblong gland

densely hairy and surrounded by a broad deep-p slightly hairy spot: anth

4' lg, on very sh fil: cap 1½' lg or more. **CALOCHORTUS LEICHTLINII** Hook, J.

Hook, f, bot mag t 5862. B 2:177 as Nuttallii.

CALOCHORTUS LILACINUS Kellogg. K 2:5. Cur 1:150. B 2:174.

CALOCHORTUS LOBBII.

CALOCHORTUS LONGEBARBATUS

CALOCHORTUS LUTEUS Dougl.

Kunth En 4:233. Da 17. Par (78. B 2:175. (Nutt, Phil ac J 7:53 =Nuttallii fide B 2:177.) Br 2:209 (Las Huevitas, Baja).

Variety **OCULATUS** Wat 14:265. Par 80, 83. Z 1:245. B 2:176.

Kunth En 4:233. Da 17. Par 178. B 2:176.

Variety **WEEDII** Baker, Linn sc J 14:309. B 2:175 as Weedii.

C. LYALLII Baker, Linn sc J 14:305. B 2:174 as elegans var. nanus wood.

C. LYONI Wat. A 1:181 fdr. Da 17.

C. MACROCARPUS Dougl, Hort sc tr 7:276 t 8. Par 273. B 2:176.

C. MADRENSIS Wat 23:273. P 1:225 as venustus.

CALOCHORTUS MAWEANUS Leichti Baker, Linn sc J 14:305. B 2:173. Z 2:167. Par 284 t.

Variety **MAJOR**.

Variety **ROSEUS**.

CALOCHORTUS MONOPHYLLUS Lem.

CALOCHORTUS NITIDUS Dougl.

Hort sc tr 7:277 t 9. B 2:175 (Ore, Nev). (Torr, Pac Ry R 4:146 = Benthami fide B 2:173.) A 1:181.

CALOCHORTUS NUDUS S. Watson.

Wat 14:263. B 2:174. Z 2:167.

CALOCHORTUS NUTTALLII Torr-Gray. Pac Ry R 2:124. B 2:177. Z 2:167, 201.

Sego Lily; quite hardy in the eastern states; fls large, pure white with handsome markings, very beautiful.

CALOCHORTUS OBISPOENSIS Lemn.

Variety **ROSEUS**.

CALOCHORTUS PALMERI S. Watson. Wat 14:266. B 2:176. Baja mts! SD Co.

C. PLUMMERAE P 2:70. A 1:182 fdr. S Ber Co (Lemmon; Parish; I. J. Gray).

= Weedii var purpurascens.

CALOCHORTUS PAVONACEUS.

CALOCHORTUS PULCHELLUS Dougl. Hort sc tr sr 2, 1:412. Par 148. B 2:172.

Variety **MACULOSUS** Z 1:245.

C. PURDYI Eastwood. A 1:182 fdr.

CALOCHORTUS PUSILLUS Dougl.

CALOCHORTUS SHASTENSIS.

C. SPLENDENS Dougl, Hort sc tr, sr 2, 1:411 t 15. B 2:176. Da 17. Ab 90. Par 308. Br 2:209, San Pablo, Baja. A 1:

181, 182 d.
 Variety **ATROVIOACEUS**. A 1:183.
 Variety **MAJOR** A 1:183.
 Variety **MONTANUS** A 1:183.
 Variety **RUBRA** A 1:183.
CALOCHORTUS TOLMIEI Hook-Arn.
 H & A, bot Beech 398. B 2:174.
 C. **UMBELLATUS** Wood, Phil ac pr 1868:168. Par 284. B 2:174 as *Illacinus*.
CALOCHORTUS UMBELLATUS Wood.
CALOCHORTUS UNIFLORUS Hook-Arn
 H & A, bot Beech 398 t 94. B 2:174. Par 284.
CALOCHORTUS VENUSTULUS Greene. P 1:158 (Ja 1888); P 1:225 (cites C. *Madrensis* Wat as a synonym).
C. VENUSTUS Dougl, Hort sc tr, sr 2. 1:412 t 15 f 3. B 2:176 Da 17. Z 2:167. Par 80 t. Br 1:205, Cruz. Ab 91. A 1:183 d.
 Variety **CITRINUS** Baker. A 1:183. B 2:176 as *luteus* var.
 Variety **OCULATUS**. A 1:183.
 Variety **LILACINUS** Baker, Gard Chron, sr 2, 8:70. B 2:176 as variety *purpurascens*.
 Variety **PURPUREUS** Baker, lc. B 2:176 as variety *purpurascens*.
 Variety **PURPURASCENS** Wat 14:265. B 2:176. A 1:183. Cajon Pass (I. J. Gray).
 Variety **ROBUSTA** A 1:183.
 Variety **ROSEUS** A 1:183.
 Variety **SULPHUREUS** Purdy. Ab 91 A 1:183 d.
CALOCHORTUS VESTA.
 Variety **LACINIATA**.
 Variety **ROSEA**.
CALOCHORTUS VESTITUS Benth.
C. WEEDII Wood, Phil ac pr 1868:169. A 1:183 d. Par 155. Ab 90. S Ber Co! Baja! Potrero!
 Variety **PURPURASCENS** Wat 14:265. Ab 90.
 Like type structurally, pet more or less p'ish and conspicuously blotched with brown.
 Variety **VESTUS** Purdy. Ab 90 as var. *purpurascens*.
CALTHA L, syst ed 1 (1735).
C. BIFLORA DC Syst 1:310. B 2:427. Z 2:160. P 3:77. 4:74, 75. = *palustris* fide IK.
C. CHELIDONII P 4:78.
C. CHIO MOPHILA P 4:80.
C. CONFINIS P 4:76.
C. HOWELLII P 4:79.
C. LEPTOSEPALA. DC Syst 1:310. Parry, Pl Wyo 17. P 4:77. B 1:9. 2:426.
C. MACOUNII P 4:77.
C. MALVACEA P 4:75.
C. ROTUNDIFOLIA P 4:80.
CALYCADIENIA. DC, Prod 5:695. = *Hemizonia* fide IK.
 Erect virgate or diffusely branching, more or less hirsute or hispid ann, with narly linear entire lvs, all but the lowest alt: Fl-lvs com subulate and oit ending in a saucer-shaped gland: Receptacle flat, the chaff herbaceous and only enclosing the disk-fis: Ray-fis 1-5, w or y, vespertine, palmotely 3-lobed or parted: Ray-ak obovold-triangular, the terminal areola low, nearly central: Disk ak turbinate-quadrangular, the outer fertile: Pap chaffy.

C. CEPHALOTES DC, lc. B 1:366 as *H. multiglandulosa* G.
C. FREMONTII G, bot Mex bound 101. = H.F. fide B 1:365. = *H. multiglandulosa* fide IK.
C. MOLLIS G 7:360. B 1:365 as *H. m.*
C. MULTIGLANDULOSA DC, Prod 5:695. B 1:366 as *H. m.*
C. PAUCIFLORA G, bot Mex bound 101. B 1:365 as *H. p.*
C. PLUMOSA K 5:49. Cur 1:140 as *H. p.* B 1:366 as *H. p.*
CALYCADIENIA TENELLA T. & G. Fl 2:402 B 1:365 as *H. t.* A 1:193 d. Abrams, Fl LA 422.
Hemizonia tenella Gray, Am ac pr 9:191.
Osmadenia tenella Nuttall.
 SD! Baja! White tar weed.
C. TRUNCATA DC, Prod 5:695. B 1:366 as *H. t.*
C. VILLOSA DC Prod 5:695. B 1:366 as *H. Douglasii* G.
CALYCANTHUS L, syst ed 1 10; 1066 (1759).
C. OCCIDENTALIS H & A, bot Beech 340 t 84. B 1:191. Z 2:157. Par 358 t.
CALCODON Nutt, phil ac J, sr 2, 1:186 (1847). = *Muehlenbergia* fide IK.
C. MONTANUM Nutt, lc. B 2:277, as *M. gracilis*.
CALYCOSERIS G, Pl Wright 2:104 t 14 (1858).
C. FARREYI G, bot Mex bound 106. B 1:432. Parish, Z 5:119 CD to Ut; says "mts E of Monterey" probably error.
C. WRIGHTII G, Pl Wright 2:104 t 14. NM. B 1:432.
CALYPSO Salisb, Parad Lond t 89 (1896).
C. AMERICANA R Br. Ait Hort Kew ed 2, 5:208. = *borealis* fide B 2:131.
C. BOREALIS Salisb, lc. B 2:131. Par 216 t. Br. Colo 228.
C. OCCIDENTALIS Heller, Torr cl b 25:193 (1898), based on *C. bulbosa* forma *occidentalis* Holzinger, CNH 3:251 (1895), as *Cytherea occ.* fide Heller, M 1:132.
Genus CALYPTRIDIDIUM Nuttall.
 T & G Fl 1:198 (1838).
C. MONANDRUM Nutt, lc. A 1:159 d. Ab 141. B 1:78. Da 3.
C. NUDUM P 1:64. M 1:132 as *Spraguea* Montana.
C. FARREYI G. A 1:164 d.
C. QUADRIPETALUM Wat 20:356.
C. ROSEUM Wat Bot King 44 t 6. B 1:78. 2:436. Parry, Pl Wyo 3.
C. UMBELLATUM Greene, Torr cl b 13:144 A 1:266 as *Spraguea umb.*
CALYSTEGIA R Br, Prod 483 (1810).
C. RENIFORMIS R Br, Prod 483. B 1:533 as *Convolvulus soldanella*.
C. SOLDANELLA R Br Prod 483. B 1:533 as *Convolvulus s.*
C. SUBCAULIS H & A, bot Beech 363. B 1:534 as *Convolvulus californicus*.
C. VILLOSA K 5:17. Cur 1:143 et B 1:534 as *Convolvulus v.*
Genus CAMASSIA Lindl.
 Lindl bot reg t 1486 (1832).
C. ALBA Hort, Gard Chron 1875 (1):662. = *Leichtlinii*.
CAMASSIA CUSICKII.

CAMASSIA ESCULENTA Lindl.

Lindl, lc. B 2:158. Par 298.

CAMASSIA FRASERI Torr.

Pac Ry R 4:91. B 2:158.

CAMASSIA LEICHTLINII S. Watson.

Wat 20:376.

CAMASSIA MONTANUM.**CAMMARUM** Fourr, in Linn sc Lyon ann, n sr, 16:327 (1868). Brit Herb (1756) 47, t 7 f Hill.**C. HYEMALE** P 3:152, based on Aconitum h, Camer (1586); Helleborus hyemalis L (1753); Eranthis hyemalis Salisb (1807); Koellea hyemalis Bir (1811); Roberta hyemalis Mex (1813).**CAMPANEA** Decne, Rev Hort 1849:241 t 13.**C. PICTURATA** Smith. Z 1:63, Guate-mala.**CAMPANULA** L, syst ed 1 (1735).**C. AURITA** P 1:221.4:39. Alk.**C. BIFLORA** R & P, Fl Per 2:55. B 1:446 as Specularia b.**C. CALIFORNICA** M 1:46, based on Wahlenbergia Californica K.**C. EXIGUA** Rattan. K Br, Z 1:83. M 1:83.**C. FILIFLORA** K 2:5. Cur 1:141 and B 1:448 as prenanthoides.**C. LINNAEIFOLIA** G 7:366. B 1:448. M 1:46 as Californica.**C. LUDOVICIANA** Torr. G, syn Fl 2 (1):11. B 1:446 as specularia biflora.**C. MONTEVIDENSIS** Spreng, syst 1:738. B 1:464 as Specularia biflora.**C. PLANIFLORA** E, bot gaz 7:5. Ckl W 6:11, Colo. = Parryi fide IK.**C. PRENANTHOIDES** Durand, Phil ac J sr 2:3:93 (1855). B 1:448. Jepson, Er 1:13. Par 328 t.**C. ROEZLI** Regel, Gartenf 1872:239. B 1:448 as prenanthoides.**C. ROTUNDIFOLIA** L, sp Pl 163. B 1:447. Ckl W 6:11, Colo.**C. SCOULEI** Hook ex A. DC Monog Camp 312. B 1:448.**C. UNIFLORA** L, sp pl 163. E 1:448. Ckl W 6:11, Colo.**C. WILKINSIANA** P 4:39.**CAMOTHECIUM** Schimp.**C. LUTESCENS** B & S. B 2:411 as Hypnum l.**C. MEGAPTILUM** Sulliv I c Musc suppl 102 t 78. B 2:412 as Hypnum m.**C. TUTTALLII** B & S. B 2:411 as Hypnum N.**C. CANEYA** Parry ex G 12:51. A 1:155 d.**C. AUREA** Wat. A 1:155.**C. CANDIDA** Parry, lc. A 1:155 d. B 2:429.**CANNABINA** Tourn, ex Med Phil bot 1:53. P 4:243.**C. LAEVIS** Moench Meth 363. = Datisca Cannabina fide IK.**CANNABIS** L, syst ed 1 (1735).**C. SATIVA** L, sp pl 1027. Asia. B 2:63.Genus **CANOTIA** Torrey.

Pac Ry R 4:68 (1856).

CANOTIA HOLACANTHA Torr.

B 1:190. Wheeler's R 6:24, 81, t. B & H 1:616. CD! Ar. Providence mts (Cooper).

Greene, Torr cl b 9:121 Cruz. Rosa.

CANTUA Juss, Gen 136 (1789).**C. AGGREGATA** Pursh, Fl 1:147. B 1:496 as Gillia ag.**C. PARVIFLORA** Pursh, Fl 2:730. B 1:

498 as Gipa p.

C. PUNGENS Torr, NY Lyc Ann 2:221.

498 as Gillia p.

CAPPARIDACEAE. A 1:261 d.**CAPNORCHIS** Borck in Roem Arch 1 (2):46 (1797). A 1:109 as Dicentra.**C. CHRYSANTHA** Jepson, Er 1:12, based on Dicentra ch. A 1:110 et B 1:24 as D. c.**CAPNOREA** Rafin, Fl Tellur 3:74 (1836). Hesperochiron Wat, bot King 281 (1871). = Nicotiana fide IK.**C. CALIFORNICA** P 5:44, based on Ourisia Californica Bth 327; C. nana Greene, Er 2:193 in part (not Raf).**C. CILIATA** Greene, Er 2:193; P 5:44, based on Hesperochiron ciliatus P 1:282.**C. CAMPANULATA** P 5:52. Cal.**C. FULCRATA** P 5:51. Wash.**C. HIRTELLA** P 5:51. Wash.**C. INCANA** P 5:49. Wyo.**C. LASIANTHA** P 5:47, based on C. nana (Lindl) Raf? Ore. Wash.**C. LEPORINA** P 5:45. Mohave.**C. MACILENTA** P 5:48. Id.**C. NANA** Raf, Fl Tellur 3:75 (1836), based on Nicotiana nana Lindl, bot reg 10 t 833 (1824). Greene doubtfully refers this to three of his new species, lasiantha, macilenta and pumila. Vide Ourisia, Hesperochiron and Nicotiana for full synonymy.**C. NERVOSA** P 5:51. Id.**C. PUMILA** P 5:50, based on Menyanthes pumila Dougl MSS; Villersia pumila Griseb in Hook Fl 2:70 t 157 (C. nana Raf?).**C. STRIGOSA** P 5:45. Cal.**C. VILLOSLA** P 5:52. Wash.**C. WATSONIANA** P 5:44 based on Hesperochiron Californicus Wat. bot King 281 t 30 ("not Ourisia Californica Bth.").**CAPARIA** L, Gen ed 1, 28, 75 (1737).**C. GRATIOLOIDES** L, syst ed 10, 1117. B 1:571 as Ilysanthes grat.**CAPRIFOLIUM** L, syst ed 1 (1735). = Lonicera.**C. HISPIDULUM** Dougl, bot reg t 1761 = L. hispidula fide B 1:280.**C. OCCIDENTALE** Lindl, bot reg t 1457 = L. ciliosa fide B 2:452.**C. SUBSPICATA** Da 7.**CAPSELLA** Moench, Medic Pf 1:85 (1792). A 1:117 d.**C. RUPEA-FASTORIS** Medic, Pf 85. B 1:44. Da 2. Par 78. Greene, Cal ac b 2:390. Cruz. Moench, Meth 271. A 1:117 d.**C. DIVARICATA** Walpers Rep 1:175. B 1:44. A 1:117 d. Greene, Cal ac b 2:390, Cruz, "probably adventive." P 1:85 Mig. Br 1:207 Rosa.**C. ELLIPTICA** C. A. Meyer, in Ledeb Fl Alt 3:193. A 1:118 as divaricata. = procumbens fide IK.**CAPSICUM** L, syst ed 1 (1735).**C. ANNUUM** L, sp pl 188. B 1:540. Cayenne pepper.**C. BACCATUM** L, Mant 1:46. B 1:540. Ar. Mex.**C. MICROPHYLLUM** Dun, DC Prod 13(1):421. = baccatum fide B 1:540.**CARBENIA** Adans. Fam 2:116 (1763).**C. BENEDICTA** Adans, lc. B 2:459.**CARDAMINE** L, syst ed 1 (1735). A 1:110 d.

- C. ANGULATA** Torr, Pac Ry R 4:65, 77. A 1:111 as *integrifolia*. B 1:31 as *paucisecta*.
- C. ANGULATA** Hook bot misc 1:343 t 69 (1830). B 1:31, Ore.
- C. ANGELORUM** Wat 24:39, Baja. P 3:11 as *Sibara* a.
- C. BELLIDIFOLIA** L, sp pl 654. B 2: 431.
- C. BREWERI** Wat 10:339. B 1:31.2:430. P 4:201, 202.
- C. BULBOSA** BSP Presl Cat NY 4. P 3:124 as *Dentaria rhombidea*.
- C. CARDIOPHYLLA** Greene, Fl Fr 266 (1891). P 3:122. (Rydb, Torr cl b 28:280 (1901); P 4:307 as *infausta*).
- C. CORDIFOLIA** G, Pl Fendl 8, NM. B 1:31.
- C. CUNEATA** Greene, Cal ac b 1:74 (7 Mr 1885). P 3:123 as *Dentaria* c. "Glab thruout; per from sm tubers; rather slender, erect; about 1" hl, sim: ple: radicle lvs 3-4 lg, 2-3ds as wide, 5-7-foliolate; lfts ovate, irreg, few-toothed or lobed, $\frac{1}{2}$ " or more lg, cuneate, tapering to slender petiolules of greater length, some of these with a pair of secondary lfts at base; cauline lfts 5-9, linear-cuneiform, entire: pet w, drying p'ish: pods?"
- Type locality: "interior of Monterey Co on mt sides near Jolon." "The habitat is dry ground, under oak trees, such as *C. paucisecta* usually affects. *C. Breweri*, the other species, to which it stands related, grows in water."—Greene, Cal ac b 1:74.
- C. DOUGLASII** Britton, NY ac tr 9:8. P 3:124 as *Dentaria* D (cites *Arabis* D, T & G F 1:83). Miss valley.
- C. FILIFOLIA** Greene. A 1:6 far sub *Sibara*. P 3:11 as *Sibara* f. A 1:110.
- C. FOLIACEA** P 4:201.
- C. FULCRATA** P 3:155. Oaxaca, Mex.
- C. GAMBELII** Wat 11:147. A 1:110 d. B 1:30. Da 2. Ab 172.
- C. GEMMATA** P 1:162. Ore.
- C. HIRSUTA** L, sp pl 655. B 1:30.2: 430. Plumas Co, Cal.
- C. HEDERARIFOLIA** P 4:202.
- C. INFAUSTA** P 4:307.
- C. INTEGRIFOLIA** Gilib Fl Lituan 2: 68 (= *pratensis* fide IK). Da 2. A 1:111 d.
- C. MODOCENSIS** P 4:203.
- C. NEGLECTA** P 3:154.
- C. OLIGOSPERMA** G 8:376. B 1:30. = *Breweri* fide IK.
- C. OREICULARIS** P 4:202.
- C. PALMERI** Wat 24:38. P 3:12 as *Sibara* P.
- C. PAUCISECTA** Bth, Pl Hartw 297. B 1:30. A 1:111 as *integrifolia*.
- C. PRATENSIS** L, sp pl 656. B 1:30.
- C. PULCHERRIMA** Greene, Er 1:148. P 3:123 as *Dentaria* p.
- C. PURPUREA** T & G, Fl 1:667. B 1:31, as *paucisecta*.
- C. QUERCETORUM** Howell, Er 3:33. P 3:123 as *Dentaria* q.
- C. RHOMBOIDEA** DC, Syst 2:246. P 3:124 as *Dentaria* r.
- C. ROTUNDIFOLIA** Michx Fl 2:30. P 3:124 as *Dentaria* r.
- C. SINUATA** Greene, Er 1:148. P 3:123 as *Dentaria* s.
- C. UMBELLATA** P 3:154. St Paul Isl, Behring sea.
- C. VALLICOLA** P 3:116.
- CARDIOSPERMUM** L, syst ed 1 (1735).
- C. HALICACABUM** L, sp pl 366. B 1:106. Br 2:142, San Gregoria, Comodon, Baja. HBK.
- C. MOLLE** HBK Nov Gen et sp 5:104. Magdalena bay, Baja (Bryant).
- C. TORTUOSUM** Bth, Voy Sulph 9. B 1:106. Br 2:142, Magdalena Island, Baja.
- CARDUUS** L, syst ed 1 (1735).
- C. BIPINNATUS** M 1:5.
- C. CALCAREUS** M 1:5.
- C. CALIFORNICUS** Greene, Phil ac pr 1892:359. A 1:198 d. Ab 441. Ha 125. Abrams, Fl LA 441. Monica, Gabriel, etc.
- Greene, Phila ac pr 1892, 359 (1893). Type locality: "hillsides, near Knight's Ferry, on the Stanislaus, Cal." *Cirsium Californicum* Gray, Pac Dy R 4:112 (1857).
- Synonyms: *Cnicus Californicus* G. *Cirsium Californicum* G.
- C. CILIOLATUS** M 1:5.
- C. CLAVATUS** M 1:5.
- C. DIFFUSUS** M 1:6.
- C. DRUMONDII**
- Variety **ACAULESCENS** G. Ha 125. *Cirsium acaule americanum* G.
- C. EDULIS** Greene. A 1:198 d. Ab 441. Abrams, Fl LA 441. Pasadena (McClatchie).
- C. FALLONUM** Brumfels 2:191 (1531). Dorsten, bot 67 (1540). *Tragus* Hist 847 (1552). Lobel, obs 487 (1570). P 3:8 as *Dipsacus*.
- C. HESPERIUS** M 1:6.
- C. INAMOENUS** Greene, Fl Fr 479 (1897). M 1:61 as *Vaseyi*.
- C. LATERIOLIUS** M 1:147.
- C. NEVADENSIS** P 3:26.
- C. REMOTIFOLIUS** Hook Fl 1:302. B 1:420 as *Cnicus remotifolius* G.
- C. OCCIDENTALIS** Nutt, Phil sc tr NS, 7:418. A 1:198 d. Ab 441. B 1:419 as *Cnicus* occ.
- Nuttall, Am phil soc tr, n sr, 7:418 (1841).
- Type locality: "round S Ber," Cal. Coville, CNH 4:142. Near Caliente.
- C. TIOGANUS** M 1:147, based on *Cnicus Tioanus* Congdon, Er 7:186 (1900).
- C. VASEYI** M 1:61, based on *Cnicus Breweri* var. *Vaseyi* G.
- Genus CAREX Linnaeus.**
- L, syst ed 1 (1735).
- Grass-like sedges, per by rtstocks, with com 3-angled sts: Lvs 3-ranked, upper elongated or sh and subtending the spikes of fls or O: Fls mon or dioe, solitary in axils of scales: Spikes either wholly pist or stam, or bearing stam and pist fls: Perianth O: Stam fls of 3 sta: Pist of a single pistil with a sty and 2-3 stig borne on a very sh axis in the axil of a scale-like bractlet which completely encloses the 3-angled, lenticular or plano-convex ak.
- C. ALMA** Bailey, Torr cl mem 1:50 Parish, Er 3:59, Acton, L A Co (Hasse).
- C. ADUSTA** Boott, in Hook Fl 2:215. B 2:238.
- C. AEMATORHYNCHA** Desv in Gay, Fl Chil 6:224. B 2:251 as *filiformis* var.

aem.

C. ANGUSTATA Boott, Hooker Fl 2:218. Greene, Cal ac b 2:414, Cruz. P 1:208, Cedrus? B 2:242.

C. AQUATILIS Wahlenb in Vet Ak Nya Handl Sock 1803:165. Parry, Wyo 16. B 2:241.

C. ARGYRANTHA Tuck ex Boott III Car 3:119. B 2:238 as adusta (a delicate form).

C. ARIDA Schwein & Torr, Cyp 312 t 24. Boott, Ill Car 1:20 t 54. B 2:237.

C. ATERIMA Hoppe, in Denk bot ges Reg. 1815, t 3, f o, p, q. B 2:238 as atrata.

C. ATHROSTACHYA Olney, Am ac pr 7:393.

Wat bot King 366. B 2:234.

C. ATRATA L, sp pl 976. B 2:239.

C. AUREA Nutt, Gen 2:205. B 2:240.

C. BARBAREAE Dewey, ex Torr, bot Mex bound 231. Ab 75. Da 18.

Sts 5-10 dm hl, lfy, glau, sharply angled and rough at least above; bracts lf-like, the lower long; pist spikes 2-4, 25-75 lg, nar, the lower with slender pedicels, 7.5-10 cm lg, attenuate at base, com truncate at apex, scales w backed with brown edge, obtuse; perigynium nerveless, abruptly contracted into a sh distinct beak.

C. BIFIDA Boott, Am ac pr 7:394. B 2:238.

C. BIGELOVII Torr & Schwein ex Boott III Car 4:167, B 2:241, as vulgaris var. alpina.

C. BOLANDERI Olney, Am ac pr 7:393. B 2:236 as Deweyana var. Bolanderi.

C. BONPLANDII Kunth, En 2:380.

Variety **ANGUSTIFOLIA** Boott, Ill Car 3:115. B 2:233.

Variety **MINOR** Olney, bot King 365. B 2:234 as var. angustifolia.

C. BREVIPES B 2:246 d, 485 as globosa var.

C. BREWERI Boott, Ill car 4:142 t 455. B 2:229.

C. BEOMOIDES Schk, Car f 176. Boott III car 2:82 t 227. B 2:230.

C. BRONGNIARTII Kunth, En 2:380, Chilli. B 2:232 as glomerata Thunb.

C. BUXBAUMII Wahl, Fl Dan t 1406. Boott, Ill Car 4:136 t 438, 439. B 2:238.

C. CANESCENS L, sp pl 974. B 2:236. Eu, Asia, Chilli, Cal, Colo.

C. CINNAMOMBA Cheesm, NZ Inst tr 14:301, New Zealand. Olney, Am ac pr 7:396 (1868). B 2:249, Cal.

C. COMOSA Boott III Car 1:14 t 38. B 2:253 as pseudocyperus var. comosa.

C. CRISTATA Schwein, NY Lyc ann 1: 66. B 2:238. = tribuloides fide IK.

Variety **mirabilis**? B 2:238.

C. CURTA Good, Linn sc tr 2:145 (1794). = canescens fide B 2:236.

C. DECIDUA Boott, Linn tr 20:119, et III Car 1:63 t 170. B 2:241.

C. DEWEYANA Schwein NY Lyc ann 1: 65, 310 (1824). B 2:236.

Variety **BOLANDERI** B 2:236, based on C. Bolanderi Olney.

C. DISPERMA Dewey, Am J sci 8:266. B 2:236 as tenella.

C. DISTICHA Hudson, Fl Angl ed 1, 347. B 2:230.

C. DIVISA Hudson, Fl Angl, ed 1, 348; ed 2, 405. B 2:231 (Eu, Asia, Africa).

C. DOUGLASII Boott, Hooker Fl 2:213. B 2:231. Br 1:218 Rosa. Parry, Wyo 16.

C. ECHINATA Murr, Prod Stirp Gott 76. B 2:237.

C. FESTIVA Dewey, Am J sci 29:246 (1835). Olney in Parry, Wyo 24. Ha 64. B 2:234.

C. FETA Bailey, Torr cl B 20:417 (1893). Ha 64.

Variety **MULTA** Bailey, bot gaz (Ja 1896). Jac. Ore.

C. FILIFOLIA Nutt, Gen 2:204. B 2:229. = Uncinia breviseta fide IK.

CAREX FILIFORMIS Linn. L, sp pl 976. Eu, Asia. B 2:250.

Variety **AEMATORHYNCHA** B 2:250, based on C. aematorhyncha Desv.

Variety **LATIFOLIA** Boeckl.

Linnaea 41:309. B 2:250. Ab 74. Da 18.

Sts 3-8 dm hl, stoloniferous; lvs oft exceeding sts, 2-4 mm wide, spikelets 3-4, p, stam 1-4, linear, 3-5 cm lg, more or less pedicelled, lower sessile; pist 2-4, oblong or cylindric, 2-5 cm lg, 6-8 mm wide, densely fld, remote, sessile or lowest pedicelled; pedicels scabrous; scales p, pale in middle, acute, ciliate at apex; perigynium coriaceous, hispid, ovoid, obtusely angled, olive-colored; beak sh, with sh divergent scabrous teeth, broader and com shorter than scales.

C. FOETIDA All, Fl Pedem 2:265. Eu, B 2:232.

C. FULVA Good, Linn sc tr 2:177 t 20 f 6 (1794). Eu.

Variety **HORN SCHUCHIANA** Boott, Ill Car 4:137 t 443. B 2:250.

Synonyms: C. Hornschuchiana Hoppe. C. speirostachya Smith.

C. GAYANA Desv, Gay Fl chil 4:205, Chilli. B 2:231.

C. GEYERI Boott, Linn tr 20:118; Ill Car 1:42 t 105. Kunze, Car 186 t 47. B 2:229.

C. GLOBOSA Boott, Linn sc tr 20:125; Ill Car 4:188. B 2:246, 485. Br 1:205, Cruz.

C. GLOMERATA Thunb, Prod Pl Cap 14. So Af. B 2:232. Mex, Chilli, SF.

C. GRAYANA Dewey, Am J sci 25:141 (1834). B 2:244 as livida Willd.

C. HOOKERIANA Dewey, Am J sci 29: 248 (1836). B 2:232 as muricata L, var. gracilis.

Stms slender from creeping rtstocks, 2-6 dm hl, sharply angled, scabrous; lvs sh'er than st, 2mm wide, tapering to a slender setaceous tip; bracts ovate, awned, com exceeding spkt, lowest setaceous and oft 25-50 mm lg; spike 2-4 cm lg, oblg or cylindric; spikelets 4-10, approximate; stam fvs few; scales ovate or lanceolate, acute, chestnut-colored with g midnerve, margin hyaline; perigynium oval, abruptly tapering to a sharply bidentate beak, seriate above on the sharp incurved margins, sh'ter than scale.

Ab 76.—"Frequent on borders of the coast marshes."

C. GYNODYNAMA Olney, Am ac pr 7: 394. B 2:251.

C. HALLENII Bailey, Am ac pr 22:82 (1886). Ha 64.

C. HASSEI Bailey, bot gaz (Ja 1896). Sber mts.

C. HAYDENIANA Olney, bot King 366.

B 2:234 as festiva var. Hayderniana. Olney, Parry Wyo 24.

C. HETERONEURA B 2:239. "Lake Tahoe to Bear valley" (K).

C. HIRTISSIMA B 2:247. "Sierra Nevada" (K).

C. HOODII Boott, Hooker Fl 2:211. B 2:231.

C. HOPPNERI Boott, Hooker Fl 2:219 t 220. B 2:243 as salina Wahl var. minor Boott.

C. HORNSCHUCHIANA Hoppe. B 2:250 as fulva variety H.

C. HYPERBOREA Drej Rev Car 43. = salina fide IK. B 2:241, as vulgaris Fries var. hyperborea.

C. INTERMEDIA Good, Linn sc tr 2:154 (1794). B 2:230 as disticha Huds.

C. JAMESII Torr, NY Lyc ann 3:398 (1836). Parry, Wyo 16. B 2:243.

C. KELLOGGII B 2:240. Lake Tahoe to Bear (K; Lemmon). Ut.

C. LAGOPINA Wahl in V A Nya Handl Stick 1803:145. B 2:233. Eu, Greenland, Cal.

C. LAGOPODIODES Schk, Riedg 2:20. = tribuloides fide IK. B 2:237.

C. LANCEATA Dewey, Am J sci 29:249 (1836). B 2:243 as salina var. minor Boott.

C. LANUGINOSA Michx, Fl 2:175. B 2:250 as filiformis var. latifolia.

C. LENTICULARIS Michx, Fl 2:172. B 2:242.

C. LEPOBINA L, sp pl 973. Olney, Parry Wyo 16, 24.

C. LIMULA Fries, Summa Veg 229. B 2:241 as vulgaris var. hyperborea.

CAREX LACINIATA Boott.

III Car 4:174 t 594. B 2:243. Ab 74. Da 18. SBar (Nutt).

Sts stout, sharply angled, 6-11 dm hi; lvs rather num, nearly equaling sts, 4-8 mm wide; bracts very lg; spikelets 4-6, cylindric; stam 1-2, cm pedicelled, 2.5-7 cm lg, 4-6 mm wide; pist 5-8 cm lg, 4-9 mm wide, remote, upper sessile, lower long-pedicelled, nodding; scales p or ferruginous, pale in the middle, ciliate, acute or with rough awn; perigynium abruptly or gradually beaked, nearly entire to bidentate with serrate teeth, compressed-lenticular, punctate, sparingly toothed on the upper margins.

C. LIVIDA Willd, sp pl 4:285. B 2:244.

C. LUZULOEFOLIA B 2:250.

C. LUZULINA Olney, Am ac pr 7:395. B 2:248.

C. MENDOCINENSIS Olney, B 2:249.

C. MIRABILIS Dewey, Am J sci 30:63. B 2:238 as cristata var. mirabilis?

= straminea fide IK.

C. MONILE Tuck, ex Boott, Hook J bot 5:69 (1846). B 2:251. = vesicaria var. (fide Boeck).

C. MONTICOLA Dewey, Am J sci 31:26; bot Mex Bound 229. B 2:247 as triquetra.

CAREX MARCIDA Boott.

Hooker Fl 2:212. B 2:231. Da 18. Ab 76. Ha 64.

St 3-6 dm hi, scabrous above; lvs 2 mm wide, sh'er than st; spike 2-4 cm lg, 6-10 mm wide, dull brown; spkts many, crowded or contiguous, closely imbricated, 4-6 mm lg, 2 mm broad, lower

compound; bracts clasping, scale-like, setaceously pointed, lowest exceeding its spkt; scales ovate, acute or cuspidate, margin hyaline, brownish; perigynium nearly bk in fr, orbicular with a sh, or ovate and with a longer bidentate beak, stipitate, plano-convex, margins incurved, serrate above, nerved, equaling scales; nutlet ferruginous, lenticular, produced at the base.

CAREX MULTICAULIS L. Bailey.

Ab 75. Da 18.

Cu very num, 3-6 dm hi, stiff, wiry, terete, smooth or minutely scabrous beneath the fls; sheaths lf-less or produced into stiff and appressed tips, 2 cm lg or more, or on sterile sts 8-15 cm lg and spreading; lower scales lf-like and prolonged into a slender tip, dilated and hyaline at base; pist fls 2-6, lower often remote; perigynium 6-8 mm lg, strongly 3-angled, many-nerved; beak very sh, entire; nutlet punctate, completely filling the perigynium.

CAREX MURICATA Linn.

L, sp pl 974. (Huds; Fl Dan t 284 = echinata fide B 2:237).

Da 18.

Variety **AMERICANA** Bailey.

Variety **GRACILIS** Boott, III Car 4:193. B 2:232.

C. NEBRASCENSIS Dewey, Am J sci sr 42, 18:102 (1854). Ha 64. B 2:243 as Jamesii.

C. NIGRA All, Fl Pedem 2:267. B 2:239 as atrata var. nigra Boott.

C. NUDATA B 2:241. Ha 64.

C. NUTTALLII Dewey, Am J sci 63:92 t 2 f 97. B 2:231 as Douglasii.

CAREX OCCIDENTALIS Bailey, Torr cl mem 1:14. Ab 76. Parish, Er 3:59, Monica mts.

Glau; sts 3-6 dm hi; lvs nearly equaling sts; spk slender, 25-50 mm lg; spkts somewhat crowded, or lowest cm distinct; bracts scale-like, minute; scales muticous; perigynium turgid, ovate, abruptly short beaked, nearly marginless.

C. PALLIDA Meyer, Cyp nov 215 t 8. B 2:230 as siccata Dewey.

C. PANICULATA L, Cent Pl 1:31 (Amon ac 4:294). B 2:232.

C. PELLITA Muhl ex Schk Ried 2:84. B 2:250 as filiformis var. latifolia = lanuginosa fide IK.

C. PENNSYLVANICA Torr, NY Lyc ann 3:410. B 2:246. = varia fide IK.

C. POLYMORPHA Muhl, ex Boott III Car 1:21 t 57. B 2:247.

C. PHYLLOMANICA B 2:233.

C. POLYTRICHOIDES Muhl, ex Schk Ried 2:34. B 2:229. Fla, Rocky mts.

CAREX PRESCOTTIANA Boott.

Linn sc tr 1:286 (1845). Hawaii. B 2:244, SBar.

Carex barbarae Dewey, ex Torr in bot Mex bound 231.

CAREX PSEUDOCYPERUS L.

L, sp pl 978.

Variety **AMERICANA** Hochst. Ab 73. Z 2:29.

Sts stout, 4-6 dm hi, angles sharp and scabrous; lvs rigid, nodose, 5-10 mm wide, lg, tapering; spkts 4-6, densely fld, the uppermost stam, lineae, 25-80 mm lg; pist spkt, 4-7 cm lg, 8-15 mm wide, cylindric, approximate or the lowest re-

mote; scales pale, attenuate to a lg hispid point, lanceolate or oblg, those of the stam linear-lanceolate; perigynium coriaceous, pale olive, ovate to lanceolate, attenuate to a lg beak; beak bidentate, teeth about 2 mm lg; nutlet obovoid, chestnut colored.

Variety **COMOSA** Boott.

Ill Car 4:141. B 2:252. Da 18. = variety **Americana** Hockst.

C. **PROPINQUA** Nees & Meyer, ex Kunth En 2:396. B 2:234. = **festina** fide IK.

C. **PYRENAICA** Wahl, VA Nya Handl Stock 1803, 139. Eu. New Zealand. B 2:234, Mt Shasta, Cal. Asia. Alk. Ut.

C. **FRESLEI** Steud Pl Cyp 242 (1885). Ha 64.

CAREX **QUADRIFIDA** Bailey.

Variety **CAECA** Bailey, bot gaz (Ja 1896). Jac.

Variety **LENIS** Bailey, Cal ac pr sr 2, 3:105. Parish, Er 3:59, Blufflake, SBer Co.

C. **RICHARDSONII** R Br, Richards Frankl narr 1st J 751, 35. Arctic region. B 2:246.

C. **RIGIDA** Good, Linn sc tr 2:193 t 22 (1794). B 2:241 as **vulgaris** var. **alpina**. Parry, Wyo 16.

C. **RAYNOLDsii** Dewey, Am J sci, sr 2, 32:39 (1861). Parry, Wyo 16.

C. **ROSSII** Boott in Hook Fl 2:222. B 2:246.

C. **SALINA** Wahl, VA Nya Handl Stick 1803, 165.

Variety **MINOR** Boott, Ill car 4:160 t 525-30. B 2:242.

C. **SARTWELLII** Dewey, Am J sci 43: 90. B 2:230 as **disticha**.

C. **SARTWELLIANA** Olney, Am ac pr 7: 396. B 2:248.

C. **SAXATILIS** Oed, Fl Dan t 159. B 2: 241 as **vulgaris** var. **alpina**.

C. **SCHOTTII** Dewey, Am J Sci, sr 2, 31: 25. B 2:244.

C. **SCOPARIA** Schk, Ried 2:20.

Variety **FULVA** B 2:237.

C. **SENTA** Boott, Ill car 4:174. B 2:242.

CAREX **SICCATA** Dewey.

Am J sci 10:27 (1826). B 2:230.

Ab 75.

Rtstock creeping, clothed with sh lanceolate scales; sts slender, sharply angled, 15-60 cm hi, scabrous above; lvs rather rigid, 1-4 mm wide, sh'er than the sts, scabrous on the margins above; bracts scale-like, the lowest cuspidate, com sh'er than its spkt; spks oblg, 2-5 cm lg, 4-8 mm broad, ferrugineous; spkt 4-12, alt, simple, ovoid, 4-16 mm lg, 2-8 mm broad, crowded or distinct below, the terminal pist at least at base, the intermediate stam or all variously mingled; scales ovate-lanceolate, acute, ferrugineous, with broad hyaline margins; perigynium oval or ovate, tapering to a long, sharply bidentate beak, fissured on the outer side, unequally serrate on margins, plano-convex, nerved, about equaling scale; nutlet oblg, dark chestnut.

C. **SITCHENSIS** Prese ex Bong Veg Sitcha 51. Alk. B 2:243.

C. **SPEIROSTACHYA** Sw ex Sm Engl Fl 4:98. B 2:250 as **fulva** var. **Horn-schuchiana**.

CAREX **SPISSA** Bailey. Da 18. Ab 74.

Sts stout, 1-2 m hi, smooth or nearly so; lvs num, rigid, glau, serrate, about equaling st, 10-15 mm wide; lower bract lg, lf-like, uppermost sh or nearly obsolete; spkts 6-12 or more, lowest 10-15 cm lg, lg-pedicelled, upper becoming sessile, all erect, cylindric; stem 4-6 or more, 3-10 cm lg; scales with a stout toothed awn; perigynium about 3 mm hi, elliptic or obovate, coriaceous, few-fld, y'ish-g.

C. **STELLULATA** Good. Linn sc tr 2: 144. B 2:237 as **echinata**.

C. **STERILIS** Willd, Schk Car f 146. Boott, Ill Car 1:55 t 146. B 2:236. Parish, Er 3:59, Bluff lake, SBer Co.

C. **STIPATA** Muhl ex Schk Ried 2:12. B 2:233.

C. **STRAMINEA** Willd ex Schk Ried 1: 49. B 2:235.

CAREX **STRICTA** Good.

Linn sc tr 2:196 t 21 f 9. Eu. (of Torrey = **angustata** fide B 2:242).

C. **SUBFUSCA** B 2:234. Cal.

C. **SUBSPATHACEA** Wormsk, Fl Dan 9: 4 t 1530. B 2:243 as **salina** var. **minor**.

C. **TENELLA** Schk, Ried 1:23. B 2:235.

C. **TRICHOCARPA** Muhl ex Schk Ried 2:47, 81.

Variety **IMBERBIS** Carey, G. Man 597. Boott, Ill Car 1:58 t 152. B 2:251.

CAREX **TRIQUETRA** Boott.

Linn sc tr 20:126. B 2:247. Da 18.

St 3-5 dm hi, slightly scabrous, lvs pale, 2-5 mm broad, =ing or sh'er than the st; spkts 3-5, oblg; stam about 18 mm lg, 3-4 mm broad, subsessile; pist 12-18 mm lg, 3-4 mm broad, erect, upper approximate, the lower pedicelled, all with abortive fls above; scales pale chestnut, ovate, num, margins hyaline; perigynium pale, covered with lg w hairs, ellipsoidal, sharply 3-angled, acute at each end, with a short bidentate beak, 1-4-nerved, lg'er and broader than scale; nutlet filling the perigynium.

A b 75. Monica, Gabriel, SBer mts.

CAREX **TEBETIUSCULA** Gooden, Linn sc tr 2:163. Eu. Ab 76.

Sts slender, pale g, erect, scabrous at least above, 3-7 dm hi; lvs com 2 mm wide, sh'er than sts; bracts minute or 0; spike narrowly oblg, compact or interrupted, 25-50 mm lg; spkts several-many, stam above; scales thin, ovate, brownish, acute or sh-awned; perigynium ovate-oval, smooth, few-nerved, tapering to a beak of about its own length, serrate on the margins above.

Variety **MAJOR** Koch. McClatchie, Er 2:78. Gabriel mts.

C. **UTRICULATA** Boott, Hooker Fl 2: 221. B 2:252.

C. **VALLICOLA** Dewey, Am J sci, sr 2, 32:40. B 2:235. Mendocino City, Cal. Idaho.

C. **VASEYI** Dewey, Am J sci, sr 2, 29: 347. B 2:251 as **monile**, "a form with the teeth of the beak serrate."

C. **VESICARIA** L, sp pl 979. B 2:251, 252.

C. **VICARIA** Bailey. Parish, Er 6:86, Bear, 6,500' alt.

C. **VULGARIS** Fries Nov Mont 3:153. Variety **ALPINA** Boott, Ill Car 4:167 t 563-75. B 2:240.

Variety **BRACTEOSA** Bailey, *Am ac pr* 22:81. Parish, *Er* 3:59, Jac.

C. WASHINGTONIANA Dewey, *Am. J sci* 10:272. B 2:241 as *vulgaris* var. *alpina*.

C. WATSONI Olney, bot king 370. B 2:244, Nev.

CARLOWRIGHTIA G 13:364 (1878).

C. ARIZONICA G 13:364. Ar.

C. CORDIFOLIA G. Baja.

C. LINEARIFOLIA G 13:364.

CARPENTERIA Torr, *Smith Contr* 6:12 t 7, (1854).

C. CALIFORNICA Torr, lc. B 1:203. 2:446. P 1:66-68, 141.

CARPHOPHORUS Cass, *Soc Philom b* 1816: 198.

C. ATRIPLICIFOLIUS G 5:159 (1861). B 1:301.

C. BELLIDIFOLIUS T & G Fl 2:66.

C. CORYMBOSUS T & G Fl 2:67.

C. JUNCEUS Bth, *voy Sulph* 21. G 8:632. B 1:301. G, *Syn Fl* 2:113. = *Bebbia* j. (Durand, *Pac Ry R* 5:8 = *Lin-osyris squamata* fide IK; *Tetradymia squamata* var. *Breweri* fide B 1:408).

CARSONIA P 4:212.

C. SPARSIFOLIA P 4:212 based on *Cleome sparsifolia* Wat (bot king 32 t 5).

CAEPINUS L, *Gen*, ed 1, 292 (1737).

CARPINUS AMERICANA Michx.

Michx Fl 2:201.

Variety **Tropicalis** J. D. Smith. Z 1:63, Guatemala.

CARTHAMUS L, *syst ed* 1 (1735).

C. LAEVIS Hill Hort Kew 57 t 5 (1769). Greene, *Er* 1:3 as *Stokesia laevis*.

Genus **CARUM** Linnaeus.

Rup. ex L, *syst ed* 1 (1735). A 1:266 d.

CARUM GAIRDNERI Benth. & Hook. B 1:259. A 1:266 d. Ab 286. Da 7. P 1:274 as *Atlanta* G. C & R, *Rev Umb* 128.

B & H, *Gen Fl* 1:891.—C-R 128.

Vancouver Island (Macoun). Ut; Wyo; Mont.

Cuyamaca! Ha U 98.

Edosmia Gairdneri T-G, Fl 1:612.

C. HOWELLII C & R *Rev Umb* 129. P 1:274 as *Ataenia* H.

C. KELLOGGII G 7:344. *Jepson. Er* 1:63. SF. B 1:259. C & R, *Rev Umb* 128. P 1:274 as *Ataenia* K.

CARUM LEMMONI C & R.

Abrams, Fl LA 286. Occasional in marshes toward the coast.

A 1:266 d. Ab 286.

C. CREGANUM Wat 20:368. C & R, *Rev Umb* 128. P 1:274 as *Ataenia* O.

CARYOPHYLLACEAE. A 1:264 d.

CARYOPHYLLATA

C. CAMTSCHATICA Lam Enc 1:395 (1733). P 4:49 as *Sieversia pentapetala*.

Genus **CASSIA** Linnaeus.

Tourn ex L Syst ed 1 (1735).

C. ARMATA Wat 11:136. B 1:161. Mo-have. Ar.

C. ANGUSTISSIMA Lam Enc 1:650. P 4:30 as *Chamaecrista* a.

C. AESCHYNOMENE DC in *Collad Hist Cass* 127 t 17: = *mimosoides* fide IK. P 4:32 as *Chamaecrista* aes.

C. ASPERA Muhl in *Ell LK* 1:474 (1821). P 3:243 as *Chamaecrista aspera*.

C. BIFOLIOLATA DC in *Collad Hist Cass* 120 t 9 f B. P 4:31 as *Chamaecrista* b.

C. BREVIFOLIA Lam Enc 1:651. P 4:30 as *Chamaecrista* b.

C. BREVIPES DC in *Collad Hist Cass* 119 t 9 f A. P 4:31 as *Chamaecrista* b.

C. CALYCIODES DC, lc. P 4:32 as *Chamaecrista* c.

C. CAPENSIS E. Mey in *Linnaea* 7:172. P 4:30 as *Chamaecrista* c.

C. CHAMAECRISTA Mill *Dict not L*. P 4:29 as *Chamaecrista chamaecristoides*.

P 3:241, cites the Linnaean as *Chamaecrista pavonis*, on page 242 cites of American authors as *C. fascicularis*.

C. CHAMAECRISTOIDES *Collad Hist Cass* 134. P 4:29 as *Chamaecrista* c.

C. CONFINIS P 3:225.

CASSIA COVESII A. Gray.

G 7:399. B 1:161. CD! *Cantilles!* Br 2:152, San Gregorio, Baja!

C. CUNEATA DC in *Collad Hist Cass* 121. P 4:31 as *Chamaecrista* c. So Am.

C. DEPRESSA Pollard, Torr cl b 22:515 t 251 (1895). Fla. P 3:242 as *Chamaecrista* d. P 4:29 as *Chamaecrista chamaecristoides*.

C. DIPHYLLA L, sp pl 379. P 4:28 as *Chamaecrista* d.

C. FASCICULARIS Michx Fl 1:262 (1803). P 3:242 as *Chamaecrista* f.

C. FLEXUOSA L, sp pl 379. P 4:27 as *Chamaecrista* f.

C. FLAVICOMA HBK *Nov Gen et sp* 6:366 (1823). P 3:242 as *Chamaecrista* f.

C. GLANDULOSA L, sp pl 542. P 4:28 as *Chamaecrista* g.

C. HECATOPHYLLA DC in *Collad Hist Cass* 124 c 18. Caribbean Sea. P 4:32 as *Chamaecrista* h.

C. LANCEOLATA Pers syn 1:356 (1805); not of Forsk (1775). P 4:31 as *Chamaecrista Persoonii*.

C. LINEATA Swartz *Prod* 66; Fl *Ind Occ* 728. P 4:31 as *Chamaecrista* l.

C. MAEYLANDICA P 3:240.

C. MIMOSOIDES L, sp pl 379. P 4:27 as *Chamaecrista* m.

C. MULTIPINNATA Pollard, Torr cl b 22:515 t 250 (1895). P 3:243 as *Chamaecrista* m.

Variety **NASHII** Pollard. P 3:243.

C. NIGRICANUS Vahl *Symb* 1:30 (1790). P 4:30 as *Chamaecrista* n.

C. NICTITANS L, sp pl 380 (1753). P 4:243 as *Chamaecrista* n.

C. OCCIDENTALIS L, sp pl 377. Br 2:152 Baja.

C. PALMERI Wat 22:408. P 3:243 as *Chamaecrista* P.

C. PATELLARIA DC *Collad Hist Cass* 125 t 16. P 4:32 as *Chamaecrista* p.

C. PERSOONII *Collad Hist Cass* 119 (1816). P 4:31 as *Chamaecrista* P. So Am.

C. PILOSA L, sp pl 540; *Collad Hist Cass* 122 t 20 f A. P 4:28 as *Chamaecrista* p.

C. PROCUMBENS L. P 4:28 as *Chamaecrista* p.

C. ROTUNDIFOLIA Pers syn 1:456; *Collad Hist Cass* 119. P 4:31 as *Chamaecrista* r. So Am.

C. SERPENS L, sp pl 541. P 4:29 as *Chamaecrista* S.

C. VIRGATA Swartz, *Prodr* 66; Fl *Ind Occ* 728. P 4:31 as *Chamaecrista* v.

C. TRISTICULA HBK *Nov Gen et sp* 6:367. P 3:242 as *Chamaecrista* t.

CASIMIROA La Llave, nov Veg desc fusc 2:2 (1825).

G. EDULIS La Llave. B 2:438. Mex.

CASSIOPE D Don, Edinb N Phil J 17: 157 (1834).

G. LYCOPODIODES D Don, lc. 158. Sib. P 3:82.

C. MEERTENSIANA G Don, Gen syst 3: 829. Par 112. B 1:456. P 3:82.

C. TETRAGONA D Don, lc. B 1:456. P 3:84.

CASTANEA Tourn ex L, syst ed 1 (1735).

C. CHRYSOPHYLLA Dougl ex Hook Fl 2:159. B 2:100 as *Castanopsis* c.

C. SEMPERVIRENS K 1:75. B 2:100 as *Castanopsis chrysophylla*.

Genus **CASTANOPSIS** Spach.

Spach Hist Veg 11:185 (1842).

CASTANOPSIS CHRYSOPHYLLA A. DC J bot 1:182 (1863). B 2:100. Z 2:120, 159.

Genus **CASTILLEIA** Linnaeus.

Mutis ex L f suppl 47 (1781). A 1:232 d

CASTILLEIA AFFINIS Hook & Arn.

H & A bot Beech 154 (1833). Greene, Cal ac b 2:409 Cruz. Da 13. P 1:92 Mig.

Cov 173, Tejon mts.

C. ACUMINATA Spreng, syst 2:775. B 1:575 as *pallida* var. *septentrionalis*.

C. ANGUSTIFOLIA P 4:2.

CASTILLEIA CALIFORNICA Abrams.

Ab 369. A 1:232 fdr.

C. CAMPORUM M 1:45. Howell, Fl NW

Am 532 (1901).

C. CANDENS Durand, Pac Ry 5:12. P

4:2. B 1:574 as *linearifolia*.

CASTILLEIA CINEREA A. Gray.

C. COCCINEA Lindl bot reg t 1136 (not

Spreng) = *parviflora* fide B 1:574. Par

350.

C. CONFUSA P 4:1.

C. DOUGLASII Bth, DC 10:530. B

1:574 as *parviflora*.

CASTILLEIA FOLIOLOSA Hook.-Arn.

H. & A. bot Beech, 154 (1833).

G, bot Mex Bound 118. B 1:574. Da 13.

Ab 370. Par 350. A 1:17, 233 d. Ha 115.

C. HAYDENI P 4:1.

C. HISPIDA Bth, Hook Fl 2:105. B 1:574

as *parviflora*.

C. HOLOLEUCA Greene, W 3:3. P 1:38,

92 Mig, Greene, Cal ac b 2:409, Cruz. Br

1:215 Rosa; Z 1:113 Cat. A 1:17 fdr, as

foliolosa fide Cur.

C. LATIFOLIA H & A bot Beech 154. B

1:574. Par 350 t.

C. LEMMONI G, syn Fl 2 (1):297. B 2:

475.

CASTILLEIA LINEARIFOLIA Benth.

DC Prod 10:532. B 1:573. Da 13. P 4:2.

Z 2:165.

C D (Parish 123); Colo; Wyo; N M.

C. LINEATA P 4:151.

CASTILLEIA MARTINI Abrams.

A 1:233 fdr. Ab 369; So Cal ac b 1:69

(1902).

C. LUTEA Heller, Torr cl b 25:263 (My

1858). M 1:45 as *camporum*.

CASTILLEIA MINIATA Dougl.

Hook Fl 2:106. A 1:233 d. Da 13. P 4:1.

B 1:574. Ha 115. Cov 173, Kameah

river.

Alaska to So Cal (Parish); Colo; Utah.

C. MINOR B 1:573.

CASTILLEIA OBLONGIFOLIA A. Gray.

G, syn Fl 2 (1):296. A 1:233 d. Parish,

Er 6:91. Cuyamaca mts.

C. OCCIDENTALIS Torr, NY Lyc Ann

2:230. B 1:575 as *pallida* var. *occiden-*

talis.

C. PALLIDA Kunth, Syn Pl Aeq 2:100.

Sib. B 1:575. P 4:1.

Variety **MINIATA** G, Am J sci. B 1:575

as *miniata*.

Variety **SEPTRIONALIS** B 1:573.

Variety **OCCIDENTALIS** B 1:575, based

on *C. occidentalis* Torr.

Variety **CAMPORUM** Greenm bot gaz 25:

266. = *camporum*.

C. PARVIFLORA Bong in St Pet ac mem,

sr 6, 5 (2):157, (1840). B 1:575. Parry,

Wyo 5. Ha 115. Cov 173. Funeral mts. Br

1:204 Cruz; 215 Rosa. Colo. Ar.

CASTILLEIA PLAGIOTOMA A. Gray.

G 19:93. S Cal (Parish 1853).

C. REMOTA P 4:2.

CASTILLEIA SESSIFLORA Pursh.

C. SIBIRICA Lindl bot reg t 925 = *pall-*

ida fide B 1:575.

CASTILLEIA STENANTHA A. Gray.

G, syn Fl 2 (1):295. Ha 115. Ab 369.

Da 13. B 2:475. A 1:234 fdr.

C. SUBINCLUSA P 4:2.

C. TOLUCCENSIS C & S in Linnaea 2:

579 (not HBK) = *parviflora* fide B 1:574.

CATALPA BIGNONIODES Walt.

CATHARINEA Ehrh. (Moss.)

C. ANGUSTATA Brid. B 2:402. Eu. Cal.

Wash.

C. CALLIBERYON Ehrh. B 2:402. Eu.

Cal.

CATTLEYA Lindl, Call bott tt 33, 37

(1824).

C. SKINNERI Batem, Orch Mex & Guat

t 13. Z 1:95. Guatemala.

CACALIA L, sp pl 834 (1753). = *Senecio*.

C. NARDOSMIA G 7:361. B 1:301 as

Adenostyles N. = *Cacaliopsis Nardosmia*

fide IK.

Genus **CAUCALIS** Linnaeus.

L, syst ed 1 (1735). A 1:266 d.

CAUCALIS MICROCARPA H. & A.

H & A bot Beech 348. Da 1. Ab 282.

Z 1:221. B 1:272. 2:452. A 1:267 d.

Wash to Baja; Arizona.

CAUCALIS NODOSA Hudson.

Scop, Fl Carn, ed 2, 1:192. Eu. Ab 282.

B 1:272. A 1:267 d.

McClatchie, Erythea 2:123, Pasadena.

CAULANTHUS Wat, bot king 18, 27

(1871). A 1:113 d.

C. AMPLEXICAULIS Wat 17:364. A 1:

113 d. B 1:66.

C. COULTERI Wat, bot king 27. A 1:

113 d. B 1:36.

C. CRASSICAULIS Wat, bot king 27. B

1:36. A 1:113 d.

C. GLANDULOSUS Hooker.

Variety *laevis* Wat. A 1:113.

C. HASTATUS Wat, bot king 28 t 3. B

1:36.

C. INFLATUS Wat, 17:364. A 1:13.

C. PILOSUS Wat, Bot King 27. B 1:36.

A 1:113.

C. PROCERUS Wat, Bot King 27. B 1:

36.

Genus **CEANOTHUS** Linnaeus.

L, in Act sc sci Upsal 77 (1741).

Unarmed or psinescent, oft arborescent

shrubs, with alt or opp lvs, and sm but

showy w, bl or p, com fragrant, fls, in
 oft lg-peduncled dense axyl or terminal
 clusters: Cx 5-lobed: pet 5, hooded, long-
 clawed: ova immersed in disk and ad-
 nate to it at base, 3-lobed: disk adnate
 to ex: sty sh, 3-cleft: fr somewhat 3-
 lobed, separating at maturity into 3 nut-
 lets. California lilac.

C. ANDERSONI Parry. S Cruz mts, Cal.

CEANOTHUS ARBOREUS Greene.

Cal ac b 2:144 (1886), Cruz; 393.—Br 1:
 208 (Rosa); smaller than on Cruz).—A 1:
 289 d. Z 1:110.

Brandegge, Zoe 1:110, Cat.

Sargent, Garden and Forest 2:364 and
 Sylva NA 2:45 refers this to *C. velu-
 tinus* as a variety.

K. Brandegge, Cal ac pr, sr 2, 4:132.

C. AZUREUS Desf, Tabl ed 2, 232. Mex.
 Br Z 1:110. = caeruleus Lagasca, Gen et
 sp 11 (1816).

C. AZUREUS K 1:55. B 1:103 as soredi-
 atus (Cur 1:133 as same).

C. CALIFORNICUS K 1:55. Cur 1:133
 as integerrimus (B 1:102 as same).

C. COARNIVENS P 2:16.

CEANOTHUS CORDULATUS Kell.

Cal ac pr 2:124 f 39 (1861). A 1:289 f dr.
 B 1:103. Z 2:155. Par 43.

Type locality: "Wasnoe", Nev (J. A.
 Veatch).

K. Brandegge, Cal ac pr, sr 2, 4:187:
 Ore; Baja; Nev; Ut.

CEANOTHUS CRASSIFOLIUS Nutt.

Nutt, T Pac Ry R 4:75 (1857). A 1:
 290 d.—Ab 244.—Da 4.—Cov 4:78.—P 1:
 86 Mig.—Br, 1:208 Rosa. B 1:104. Guad.

SBER; Guad; Cruz; mts S of LA
 (Parry).

Type locality: "Cajon Pass," Cal.

Brandegge, Zoe 1:113. Cat.

C. CUNEATUS Nutt, T & G Fl 1:267. B
 1:104. Z 2:155. Ab 244. Ore. Baja!

C. DECUMBENS Wat 10:335. B 1:103.
 Z 2:155.

C. DENTATUS T & G, Fl 1:268. B 1:102.

CEANOTHUS DIVARICATUS Nutt.

Nutt, T & G Fl 1:266. Par 262. Da 4.
 Ab 243. B 1:103.2:439.

Variety **EGLANDULOSUS** Wat, bot
 King 51. B 1:103 as cordulatus K.

C. DIVERGENS Jepson, Er 1:10, 12.

C. DIVERSIFOLIUS K 1:58. Cur 1:133
 as hirsutus (B 1:103 as dentatus).

C. FENDLERI G, Pl Frem 29. Z 2:104.

C. FLOREBUNDUS Hook, bot mag t
 4806. B 1:104.

CEANOTHUS GREGGII Gray.

G, Pl Wright 2:28 (1853).—A 1:290.

Parish, Brythea 7:93.—"Cushenberry
 springs, on the desert base of the SBER
 mts (Parish 1620): lvs elliptical, 6-8
 mm long, all spinosely few-toothed."

Type locality: "Battlefield of Buena
 Vista", and "side of mountains near
 Frontera, NM."

K. Brandegge, Cal ac pr, sr 2, 4:208,
 considers this as *C. verrucosus* var
Greggii.

CEANOTHUS HIRSUTUS Nutt.

Nutt, in T & G Fl 1:266.—A 1:290 d.—
 Ab 244. B 1:103.

Abrams, Fl LA 244. Gabriel mts.

SBER (Parry); Quintin!

Ceanothus oliganthus Nuttall.

CEANOTHUS IMPRESSUS Trel.

Trelease, Cal ac pr, sr 2, 1:112 (1888).—
 A 1:290 d.

C. INCANUS T & G, Fl 1:265. B 1:103.

CEANOTHUS INTEGERRIMUS H. & A.

H & A, bot Beech 329 (1838-40).—A 1:
 290 d.—Ab 242.—Par 86. B 1:102. Z 2:
 155. Da 4.

C. LOBBIANUS Hooker; bot mag t
 4810. B 1:103 as dentatus.

CEANOTHUS MACROCARPUS Nuttall.

T & G Fl 1:267.—A 1:291 d.—Ab 244. B
 1:104 as cuneatus.

Abrams, Fl LA 244. Monica; S Ana
 mts.

Greene, Cal ac b 1:80. SBER Co.

C. MEGACARPUS Nutt, sylv 2:46. Da

4. B 1:104 as cuneatus.

C. NEVADENSIS K 2:152. Cur 1:133 et

B 1:102, as integerrimus.

C. NITIDUS Torr. Pac Ry R 4:75. B 1:

103 as sorediatus.

CEANOTHUS OLIGANTHUS Nutt.

Nutt, in T & G Fl 1:266.—A 1:290 as
 hirsutus. Da 4.

C. ORCUTTI Parry. A 1:98 fdr. Cuya-
 maca!

C. OREGANUS Nutt, T & G Fl 1:265. B
 2:439 as sanguineus. Hooker, bot mag t
 5177.

CEANOTHUS OVATUS Desf Arb 2:381.
 Z 2:104.

C. PAPILOSUM T & G Fl 1:268. Z 2:
 83. B 1:104.

C. PARRYI Trelease, Cal ac pr, sr 2, 1.
 109. Jepson, Er 1:14.

C. PARVIFLORUS Z 2:155.

C. PERPLEXANS Trel, syn fl 1, 1:417
 (1897). Ha 94.

C. PROSTRATUS Bth, Pl Hartw 302. B
 1:104. Z 2:155. Par 330.

CEANOTHUS RIGIDUS Nutt.

T & G Fl 1:268. B 1:104. Monterey; SD!

C. RUGOSUS Z 2:75, 83.

C. SANGUINEUS Pursh Fl 1:67. B 2:
 439.

CEANOTHUS SOREDIATUS H. & A.

H & A, bot Beech 328.—A 1:291 d.—Ab
 243. Z 1:110. B 1:103.

Abrams, Fl LA 243. "Gabriel mts."

C. SPINOSUS Nutt, in T & G Fl 1:267.—

A 1:291 d.—Ab 242. B 1:103. Da 4. Baja!

Abrams, Fl LA 242. Monica and
 Santa Ana mts.

CEANOTHUS THYRSIFLORUS Eschw.

Pet ac mem, sr 6, 10:285 (1826). Par
 280 t. B 1:102. 2:439. Z 2:3, 5, 344.

CEANOTHUS TOMENTOSUS Parry.

Trelease, Dav ac pr 5:190 (1889).—Ab
 243.—A 1:291 d.

C. VEITCHIANUS Hooker, bot mag t
 5127. B 1:104.

C. VELUTINUS Dougl. Hooker, Fl 1:
 125 t 45. B 1:102. 2:439. Par 43. A 1:
 289.

CEANOTHUS VERRUCOSUS Nutt.

Nutt, T & G, Fl 1:267.—"Branchlets
 verrucose and somewhat canescent with
 a rusty-colored pubescence: lvs alt, ap-
 proximate or crowded, very thick and
 coriaceous, roundish-obovate or cuneate-
 oval, oft emarginate, the younger some-
 times obscurely serrulate, glob above,
 minutely tomentose-canescens beneath:
 umbels axyl, few-fld, naked; fr with
 minute protuberances at angles. Low
 hills near the coast, SD—lvs about ½' lg

and 4-5" wide: fr the size of a large pea." Baja!

Greene, Cal ac b 1:81.

Variety **GEEGGII**. A 1:290.

CEANOTHUS VESTITUS Ge.

P. 2:101, near Tehachapi, Cal. Da 4.
CEDEONELLA Riv ex Rupp Fl Jen ed Hall 225 (1745).

C. CANA Hook bot mag t 4618, Mex.

Variety **LANCEOLATA** G syn Fl 2 (1): 462, ed 2 (1886). M 1:4 as Brittonastrum lanceolatum.

C. RUPESTRIS P 1:164. M 1:4 as Brittonastrum rupestre.

CELASTEUS L. Gen ed 1:59 (1737).

C. OBTUSATUS Presl, bot Bemerk 34. B 1:98.2:67 as Simmondsia Californica.

CELOME P 4:210.

C. PLATYCARPA P 4:211 based on cleome platysarpa T.

C. SPARSIFOLIA P 4:index, error.

CELOSIA L. Gen ed 1, 34 (1737).

C. FLORIBUNDA G 5:167. Br 2:199, Baja (commondu).

CELTIS Tourn ex L. Gen ed 1:337 (1737).

C. BREVIPES Wat 14:297. B 2:63.

C. DOUGLASII Planch in Ann sc nat sr 3. 10:293. B 2:63 as reticulata.

C. OCCIDENTALIS L, sp pl 1044. B 2:63.

C. PALLIDA T, bot Mex Bound 203. = Tala fide IK.

C. RATICULATA T, NY Lyc ann 1:247 (1824). B 2:63.

Genus **CENTAUREA** Linnaeus.

Gen ed 1, 263 (1737). A 1:197 d.

CENTAUREA MELITENSIS Linn.

Sp pl 917. Eu. A 1:197 d. Ab 442. P 1:90 Mig. Z 1:58. B 1:421. Da 10. Greene, Cal ac b 2:405, Cruz. Br 1:213 Rosa.

Type locality: the island of Melita, Mediterranean sea.

Coville, CNH 4:142.

Parish, Zoe 1:58.

Davidson, Erythea 1:60. LA Co.

Abrams, Fl LA 442. A common weed in waysides and fields. JI-N. Native of Southern Eu.

CENTAUREA SOLSTITIALIS Linn.

L, sp pl 917. B 1:421. Parish, Z 1:58.

Genus **CENTROMADIA** Greene.

Rigid corymbosely or diffusely branching inns, with alt pinnatifid or entire spinescent lvs: herbage more or less resiniferous or glandular thruout: inv bracts subulate, pungent, half enclosing the ray-ak, persistent: ray-fls 15-40, y. sm, fertile: disk-fls sterile: receptacle convex, chaffy thruout, the chaff distinct and persistent: ak triangular, the inner angles terminated b ya sh apiculation, nearly smooth or faintly rugose-tuberculate: pap O.

CENTROMADIA PARRYI Greene.

A 1:248 d. Ab 421.

Abrams, Fl LA 421.—"Brackish flats toward the coast. Je-Ag."

C. PERENNIS P 3:26.

CENTROMADIA PUNGENS Greene.

A 1:248 d. Ab 421.

CENTROSTEGIA G ex Bth in DC 1:27 (1856).

C. LEPTOCERAS G 8:192. B 2:34 as Chorizanthe 1.

C. THURBERI G ex Bth as above. B 2:34 as Chorizanthe T (A 1:215 as same).

Genus **CENTUNCULUS** Linnaeus.

Dill ex L syst ed 1 (1735).

C. LANCEOLATUS Michx Fl 1:94. = minimus fide B 1:469.

CENTUNCULUS MINIMUS Linn.

L, sp pl 116. B 1:469. Ore to S Am. Eu. SD!

CEPHALANTHERA Rich, in Mus Par mem 4:51. (1818).

C. AUSTINAE Heller, Cat ed 2, 4 (1900). M 1:49 as Eburophyton Austinae.

C. OREGANA Reich, f, Linnaea 41:53 (1877). B 2:137. Per 394. M 1:49 as Eburophyton Austinae.

CEPHALANTHUS L, Gen ed 1, 61 (1737).

C. OCCIDENTALIS L, sp pl 1:95. Jepson, Er 1:15Er 1:15, Blue lakes. Par 100. B 1:282.

CEPHALOPHORA Cav Ic 6:79 t 599 (1801).

C. ACAULIS DC Prod 5:663. P 3:265 as Tetraneuris a. Actinella fide IK.

C. SCAPOSA DC Prod 5:663. P 3:266 as Tetraneuris S. Actinella s fide IK.

CERASTIUM [Dill] L, syst ed 1 (1735). A 1:162 d.

C. ADSURGENS P 4:303.

C. ANGUSTATUM P 4:300.

C. ARVENSE L, ep pl 438. B 1:67. Z 2:341.

C. CAMPESTRE P 4:301.

C. CONFERTUM P 4:302.

C. EFFUSUM P 4:298.

C. FASTIGIATUM P 4:303.

C. MAXIMUM M 1:50.

C. NUTANS Raf, Prec Decourv 36. A 1:23 d. B 1:66.

C. OBLONGIFOLIUM T, Fl US 460. B 1:67 as form of Arvense.

C. OCCIDENTALE P 4:299.

C. OREOPHILUM P 4:297.

C. PATULUM P 4:302.

C. PILOSUM Ledeb, Pet ac mem 5:539 (1815). Sib. B 1:67, 2:435.

C. SCOPULORUM P 4:298.

C. SONNEI P 4:303.

C. STELLARIOIDES Moc, ex Ser in DC 1:415. B 1:67 as pilosum.

C. TRIVIALE Link en Hort Berol 1:433. Eu. Asia. Afr. A 1:162 d. Da 3. Ab 146 as vulgatum.

C. VESTITUM P 4:301.

C. VISCOSUM L, sp pl 437. Ab 146. A 1:23 d. Da, Er 1:58, LACO. B 2:434. Z 2:29, 341. = glomeratum fide IK.

C. VULGATUM L, Fl succ 2:158. Ab 146. B 2:434. A 1:162 as triviale (= glomeratum fide IK).

CERASUS Tourn, ex L, syst ed 1 (1735). = Prunus fide IK.

C. DEMISSA Nutt, T & G Fl 1:411. B 1:167 as P. demissa.

C. EMARGINATA Dougl ex Hook Fl 1:169. B 1:167 et cur 1:136, as P em.

C. GLANDULOSUS K 1:59. B 1:167 as P. emarginata.

C. MOLLIS Dougl, Hook Fl 1:169. B 167 as P. emarginata var. mollis Brewer.

Nutt, sylv 2:14 t 46. P. mollis Walp.

C. ILICIFOLIUS Nutt, ex H & A bot Beech 340 t 83. A 1:317 as P. ilicifolius.

CERATOPHYLLACEAE. A 1:285 d.

CERATOPHYLLUM L, syst ed 1 (1735).
C. APICULATUM Cham in Linnaea 4: 504. = demersum fide B 2:78.
C. DEMERSUM L, sp pl 982. A 1:285 d. B 2:78. Ab 151. Da 16.
CERATOCHLOA Beauv, Agrost 75 t 15 f 7 (1812). = Bromus.
C. BREVIARISTATA Hook Fl 2:253. B 2:321. = B. breviaristatus fide IK.
C. GRANDIFLORA Hook fl 2:253. B 2:321. = B. virens fide IK.
C. UNIOLOIDES DC, Cat Hort Monsp 92. B 2:322 = B. unioloides fide IK.
CERATODON Bridel. Moss.
C. PURPUREUS Bridel. B 2:365. Cal. Nev.
 Variety **XANTHOPUS** S & L. B 2:365. Pedicels w. On rts and stumps of both sp of Sequoia (Bolander).
CERCIDIUM Tul in Arch Mus Par 4: 133 (1844). = Parkinsonia fide B 1:162.
C. FLORIDUM Bth ex G Pl Wright 1: 58. Mex. T, Pac Ry R 5:360 t 3 (not Bth.) = Parkinsonia Torreyana fide B 1: 162.) = Parkinsonia florida.

Genus **CERCIS** Linnaeus.

L, sp pl 374 ed 1 (1753). A 1:303 d.
C. CALIFORNICA T ex Bth 361. B 1: 161 as occidentalis.
C. CANDENSIS L, sp pl 374. B 1:161.
CERCIS OCCIDENTALIS Torrey.
 G, Bost J nat hist 6:177 (1850). Tex. Par 204. A 1:303 d. B 1:160.
C. RENIFORMIS E ex G, lc. B 1:161 as occidentalis.
C. SILICUASTRUM L, sp pl 374. Eu. Bth 307 (var), = occidentalis fide B 1: 161.

Genus **CERCOCARPUS** H. B. K.

Nov Gen et Sp 6:232 t 559 (1823). A 1:319 d.

C. ARIZONICUS Z 2:245.
CERCOCARPUS BETULAEFOLIUS Nutt Hooker Ic t 323. A 1:32 d. Da 5. Ab 202. B 1:175 as parvifolius var. blober.
 Greene, Cal ac b 2:396. Cruz.—"Tree oft 18-25° hi, with clean trunk and smooth light gray bark. * * lvs not rarely 2½ lg, and 1½ broad: young twigs with the odor and flavor of the black birch. * * *"

Hall, U 85. Mt Mahogany.

Cruz; "trees often 18-25 ft high" (Greene).

Cercocarpus parifolius glaber. Watson, bot Cal 1:175.

Cercocarpus betuloides T & G, Fl 1:427.

C. BETULOIDES Nutt. T & G Fl 1: 427. A 1:320 as parvifolius.

C. BREVIFLORUS G, Pl Wright 2:54. Z 2:14, 244.

C. INTRICATUS Wat 10:1346. Z 2:14, 244.

CERCOCARPUS LEDIFOLIUS Nutt.

Nuttall, Sylva 2:28 t 51.

T & G Fl 1:427. A 1:320 d. B 1:174. Z 2:14, 244.

"Mt Mahogany;" Sber mts.

Ore; Mountain Mahogany.

Hooker, Ic Pl t 324.

Watson, bot King Exp 83.

Hall, U 85.

CERCOCARPUS PARVIFOLIUS Nutt.

ex H & A bot Beech 337. B 1:174, 2:144.

Z 2:102, 157, 245. Par 379.

Variety **GLABER** Wat B 1:175. A 1: 320 as betulaeifolius.

CERCOSPORA PORTORICENSIS M 1:15.

CERCOSPORIDIUM HELLERI M 1:16.

Genus **CEREUS** Haworth.

CEREUS Mill Gard Diet ed 8 (1768). A 1:381 d.

"Flowers about as long as wide or elongated. Scales of the ovary distinct, with naked or woolly axils, or almost obsolete and the axils spiny. Berry succulent, covered with spines or scales or almost naked. Seeds black, without albumen. Embryo short and straight or curved or hooked; cotyledons usually contrary to the sides of the seed.—Plants of all sizes, low or climbing or erect, sometimes enormous; spine-bearing areolae on vertical ribs. Flowers from the older or, at least, fully formed parts of the plant, not from any preformed areolae, but bursting through the epidermis just above the bunches of spines; some open only in sunlight, others only at night, others again are not thus influenced. Fruit of ten edible, sometimes of very large size." —E.

C. ALAMOSSENSIS Coulter. A 1:381 d.

CEREUS AMECAENSIS Heese.

Similar to C. speciosissimus in habit and spl, but the fls pure w, 5 l across. Small plants produce 4-6 fls. Mexico.

CEREUS AMECAMENSIS.

GC 1904; 35:246. See C. amecaensis.

CEREUS BAVOSUS Weber.

Erect, rarely branching, 8-12 or more stems from the same root, 10 or more feet high, 4 inches in diameter; ribs 9, slightly obtuse with sharply defined intervals; areolae an inch apart on the older stems; radial spines 15, ¼-½ inch long, the lower ones the longer, on the old growth all stout and about ½ inch long; central spines 4-6, the upper one-eighth inch long or more, the lowest often 3 inches long, deflexed, twisted, flattened or carinate. Flower 2 inches across, including the ovary 4 inches long; petals white, obtuse, anthers pale yellow, filaments white; style 2 inches long. Fruit said to be red, 4 inches long, with black seeds; immature fruit with about 130 woolly areolae with capillary spines in the axils of obsolete scales or tubercles. State of Puebla, Mexico (Orcutt 2635). Called 'cardon' by the Indians, perhaps erroneously.

CEREUS BAXANIENSIS Karw.

Mexico.

CEREUS BENECKII Eh.

Arborescent and branching, after the habit of *Cereus* geometrizans, 6-7 ribbed; areolae ¼ inch apart, woolly, bearing 8 radial spines ½ inch or less long, and 1 central 1-3 inches long, curved upward, all ash colored; fruit globose, ½ inch in diameter, dull purple; remains of flower usually deciduous, leaving a large ash-colored scar; seeds large, 36-80 in each berry. The be-ta-zo-vo of the Indians. In aspect of plant and fruit this closely resembles the garambullo (*Cereus geometrizans*). Near Oaxaca, Mexico (Orcutt 2700).

CEREUS BERLANDIERI E.

Stems $1\frac{1}{2}$ -6 inches long, an inch thick, bearing sweet-scented purple flowers 2-4 inches in diameter; a native of southern Texas and Mexico.

C. BRANDEGEI Coulter. A 1:381 fdr.

CEREUS CHIOTILLA Weber.

Arborescent, 20 feet high, branching freely a foot or so above the ground, the older branches 6 inches in diameter, the tips of the branches $2\frac{1}{2}$ inches in diameter with densely woolly ovate or shield-shaped areolae, bearing the terminal flowers and fruit. The tree often of an umbrella shape, or the interlocking branches curve or twisting in any other than a symmetrical manner. Ribs 6-8, acute, with sharp intervals; areolae $\frac{1}{4}$ inch across, $\frac{1}{2}$ inch long, nearly or quite contiguous; 1 stout, terete, ashy, central spine $\frac{1}{4}$ -2 inches long or less—often 2 or 3 short centrals above $\frac{1}{4}$ inch long, erect; radials about $12\frac{1}{4}$ inch long, curved inward, all but the lowest laterally disposed, spines all nearly white when young. Called 'tiotillo' by the Indians, who gather quantities of the fruit for the markets of Tehuacan in June for 1 cent. Fruit $1\frac{1}{4}$ inch diameter, slightly longer, remains of the flower persistent; color dull dark red, with 25-30 thin semi-transparent triangular scales—the base and sides equal—about three-eighths of an inch; pulp dark purple, with numerous black seeds. State of Oaxaca, Mexico (Orcutt 2648, 2656). Flower $1\frac{1}{2}$ inches

CEREUS CONFILORUS.

The following characters distinguish this from *Cereus nycitalus*:—Calyx-tube about 8 inches long, the scales above bright red, large, gradually passing into the sepals. Sepals brightly colored, increasing in size from without. Petals of the outer series narrower than those of the inner, which are about $3\frac{1}{4}$ inches long and $1\frac{1}{4}$ inches broad. Stamens about 1 inch shorter than the petals. Night-blooming, flowers cone-shaped, inodorous. Hayti. Introduced 1904 by W. Weingart (MFK 1904, 118).

Cereus nycitalus Link & Otto variety *armatus* Hort.

C. Emoryi E. Am J sc, sr 2, 14:338. B 1:247. Da 7. P 1:203 Cedros. A 1:382 d. Ab 258.

C. ENGELMANNI Parry, Am J sc, sr 2, 14:338. A 1:382 d. B 1:246. P 1:203 Cedros.

C. EUECA Br. A 1:383 fdr. Z 2:20.

CEREUS FENDLERI E.

A queer irregular cespitose plant of Arizona, New Mexico and Sonora, rarely more than 12 heads in a cluster, stems 3-4 inches in diameter and about 6 inches high, distinguished by the one usually black central spine, which often curves upward. Flowers magenta colored.

CEREUS FLAGELLIFORMIS Haworth.

The well-known whip-cord or Rat's-tail Cactus, so useful in hanging baskets or for grafting on columnar species; the bright rose-colored flowers are extremely attractive.

Variety **LEPTOPHIS** KS.

C. FLAVIFLORUS Coulter. A 1:384 as *maritimus*.

CEREUS GEOMETRIZANS Mart.

Arborescent, 20 feet high or more, assuming somewhat an umbrella form from its manner of branching; joints mostly short, thick; ribs 5 or 6, acute when young, with sharply defined intervals—on old plants often very obtuse, bearing large woolly spineless areolae; stems of young growth 3 inches in diameter, areolae $1\frac{1}{2}$ inches apart, woolly—in age the enlarged bulbous bases of the spines are in close contact, covering the areolae completely (or spineless!); radial spines 3-5, $\frac{1}{4}$ - $1\frac{1}{2}$ inches long, central spine $1\frac{1}{2}$ inches in maximum length, straight or twisted, all stout, angled, ashy black, woody; central spine sometimes absent, lateral radials usually the longer, very variable. Plant smooth, bright apple green or glaucous, known as the *garambullo*. Fruit rarely over $\frac{1}{2}$ inch long, half as great in diameter, or globose, attached to a small tomentose areolae, remains of flower often persistent, when deciduous leaving a small round scar; epidermis usually smooth, with 1-6 tomentose areolae bearing minute scales (more rarely bearing in their axils a more minute spine), purple (sometimes glaucous) with purple pulp; fruit bursting irregularly at maturity. As many as 14 fruits were seen growing from one areolae; one rib of 11 areolae on a joint of 5 ribs bore 36 fruits, only 1 of the areolae without fruit, and this is frequent on the hundreds of branches—old and young alike, almost to the trunk. Seeds large, black, 63 from one berry. Fruit ripening in June, 1902, in the state of Oaxaca, Mexico (Orcutt 2670); in July near San Luis Potosi (2809), where its growth is smaller, and large quantities are collected by the inhabitants and eaten fresh, or dried; Tehuacan (2630).

Console made this the type of his genus *Myrtillocactus*. *Cereus cochal* Orcutt, from Lower California, is closely allied, and treated as a variety by some authors. **CEREUS GRANDIFLORUS** Haworth.

Miller, Gard Dictionary, ed. n 11. "The night-flowering *cereus* has gained a fame which entitles it to prominent notice, and plants might well be included in every garden, for its flowering is a source of interest to the least observant persons."—Castle.

C. GIGANTEUS E. A 1:383 d. B 1:247, 2:450.

CEREUS GREGGII Engelm.

Gregg's night blooming cactus occurs in the arid regions of Southern Arizona, New Mexico, Texas, Chihuahua and Sonora, and is notable for its large tuberous root and slender inconspicuous stems, 1 to 3 or 4 feet high, a half inch in diameter. Flower 6 inches long, 2 inches in diameter, with pale, purple petals, followed by the smooth, oval, acuminate, scarlet fruit, succulent, crowned with the remains of the corolla, and supported by a distinct stipe of a bright crimson.

C. GLOMERATUS E. A 1:384 as *maritimus*.

C. GUMMOSUS E. Z 2:20, 193.

The pitahaya agria, or cord-wood cactus, of Lower California, is noted for its large, bright, scarlet fruit, possessing a delicious flavor, pleasantly acid, like a strawberry, the pulp the color of a ripe watermelon, with the small black seeds scattered throughout. The flowers are 4 to 5 inches long, purple, and quite handsome. The stems are 4 to 10 feet high, 3 to 5 inches in diameter, armed with stout angular, blackish spines.

CEREUS HOLLIANUS Weber.

"Branching from base, 4-5 m high and stout, dark-green; ribs 10-12, acute, often oblique, with areolae 2-3 cm apart; radial spines about 12, irregular, 1-1.5 cm long; centrals 3, the lower one 5-10 cm long and deflexed; flowers near the summit, white, 10 cm long; fruit 'as large as a goose egg', dark purplish-red, bearing wool and spines. Type Weber specimens in hb Mo bot gard. Common about Tehuacan, Puebla. Important for its wood, which forms long, straight rods used for poles in hedges and vineyards."—Coulter, Cont Na hb 3:411.

CEREUS HONDURENSIS.

A night-blooming scandent branched plant allied to *Cereus Kunthianus*. Branches usually 10-ribbed, about 1 inch in diameter; spines 7-9, short, slender, white or reddish-brown; flowers about 8 inches long, fragrant; ovary and tube scaly and woolly; outer perianth-segments yellow to chestnut-colored, inner white. Honduras (MfK 1904, 147).

CEREUS MARGINATUS DC.

"Stem simple or branching at apex, erect, dark green, 5-7.5 cm in diameter, ribs 5-7, obtuse, with acute serrals, woolly through the whole length on account of the confluent areolae; spines 7-9, short (4-6 mm) and conical, rigid, grayish (younger ones purplish-black, the central scarcely distinct from the rest); flower brownish purple, slender-tubular, 3-5 cm long; fruit globular and spiny. Type unknown. From San Luis Potosi southwest throughout Mexico. The stem is often covered with a woolly crust, and the woolly confluent areolae are often double. It is said to be frequently used for hedges in southern Mexico."—Coulter, Cont Na hb 3:399. *Cereus gemmatus* Zucc ex Pfr Enum 96.

C. MARITIMUS Jones. A 1:384 fdr.

C. Mojavensis Engelman and Bigelow, Pacific railroad reports 4:33, 36, t. 4, fig. 8. In the mountain canyons opening into the Mohave desert, in California, occurs one of the handsomest species of cactus—rarely seen except by some lone prospector who may assail its almost inaccessible home. It

forms dense hemispherical masses 2-3 feet in diameter, composed often of one to several hundred oval heads 2-6 inches high, and 1.5-2 in diameter: the areolae are $\frac{1}{4}$ inch in diameter, half an inch or more apart: the long and bulbous slender spines are curved and interlocked, almost hiding the bright apple-green body of the plant: upper and lower radial spines 9-15 lines long, the uppermost one wanting or weaker than the rest; lateral spines 1-2 inches long, ashy-red when young; central more angled, 1.5-2.5 inches long and dusky, all ashy-gray in age: flowers red, as in *C. polyacanthus*, from which it is scarcely specifically distinct, though of different aspect. (20-500) *C. nycticalus* Link, Verh. Preuss. Ver. Gartenb. 1834, 373, t. 4. Suberect, climbing, cylindric or 4-6 ribbed, long-jointed; flowers odorless, white, night-blooming. Mexico. (5-20)

CEREUS OCAMPONIS Salm-Dyck.

Climbing over trees, fences or houses; joints 3- to commonly 4-sided, 1 or 2 to 8 feet long, young growth even-ribbed; areolae 1-1 $\frac{1}{2}$ inches apart, tomentose, commonly 7 radials and 1 central spine; radials rarely over 1 mm, central rarely 6 mm long, stout, straight or slightly curved. Stems dark green, $\frac{3}{4}$ inches thick, the ribs scarcely an eighth inch thick, strongly crenulate, bearing the areolae at the summit. Flower white, style 7 inches long; stigmata 14, slender, white, nearly $\frac{1}{2}$ inch long; ovary globose, an inch in diameter, covered with about 10 tubercles surmounted with minute scales (the tomentose axils commonly bearing 2 white spines); tube of corolla 5 inches long, bearing 15 or more similar scales with tomentose and spiny axils; filaments and large anthers apparently white (in dried flower), petals narrow, acuminate, $\frac{1}{2}$ inches long, extending three-fourths inch beyond the filaments. Nopale, or Nopalita de Cruz, of the Indians; 15-20 feet high; cultivated in gardens for its fruit (?). States of Puebla and Oaxaca, Mexico (Orcutt 2709).

CEREUS ORCUTTII K Br.

"Stems erect, branching, bright green, reaching a height of 6 m and a diameter of 15 cm, with hard woody center; ribs 14-18, about 1 cm high; areolae round, about 6 mm in diameter and about half that distance apart, densely covered with short, light gray wool; spines all slender, spreading, yellowish brown, irregularly 3-seriate; radials 12-20, about 12 mm long, deficient above; intermediates about 10, one-third to more than twice longer, less spreading, one of the upper spines of this row usually stouter and darker, porrect, often reaching a length of 7 cm; centrals about 5, porrect-spreading a little longer than the intermediates; flowers greenish brown, darker outside, diurnal, about 4

cm entire length; petals short apiculate; ovary densely covered with short scales, almost completely concealed by thick, rounded tufts of yellowish wool, in which are embedded dark brown bristles 4-6 mm long; stamens lining the upper half of the tube; style tips acute; fruit not known"—Katharine Brandegee, Zoe, 5:3 (Je 1900).

Near Rosario, Baja California. Densely covered with bright yellowish brown spines; fruit the 'size of an orange'; called pitalla dulce.

C. PACIFICUS E. A 1:384 d.

C. PALMERI E. A 1:384 fdr.

C. PECTEN-ABORIGINUM E. Z 1:26, 2:19.

herb. Sereno Watson, Proc. Am. Acad. 21:429 (2 Je 1886):—"Stems tall, erect, solitary, with few erect branches, 10-11 costate; areolae densely tomentose, finally glabrate; spines 8-12 (usually 10), very stout, straight, ash-colored tipped with black, the marginal spreading or reflexed (6 lines long or less), the central one and sometimes the 2 uppermost larger ($\frac{1}{2}$ -1 $\frac{1}{2}$ inches long) and erect or ascending, compressed or angular: fruit dry, globose ($2\frac{1}{2}$ or 3 inches in diameter), closely covered with pulvinate densely hairy areolae, which are for the most part beset with stiff setaceous unequal yellowish spines (the longest 9-11 lines long): seeds large 2 lines long, black and shining; embryo hamate. Growing 20-30 feet high and 2 feet in circumference, on stony mountain-sides at Hacienda San Miguel (AA); called Cordon, or Hecho, by the Indians, who grind the seed to mix with their meal, and use the bristly covering of the fruit as a hair brush. The species was first made known to Dr. Engelmann by a specimen of these brushes which was obtained by Dr. Palmer in 1860 from the Papago Indians at Hermosillo in Sonora. Dr. Engelmann's notes upon his material have been found among his papers. From these it appears that the remains of the tube of the flower showed very numerous loosely imbricated linear-lanceolate sepals, 6-9 lines long, woolly in the axils. Palmer's present specimens scanty, but supplemented by a photograph and by notes, are sufficient to furnish most of the needed characters and to confirm the distinctness of the species. The flower remains unknown. **C.**

macrogonus, Salm-Dyck, of unknown origin, has been in cultivation since before 1850. Plants so named in hort. Cambridge, now about 3 feet high, resemble the present species, and it may be possible that the two species may finally prove to be the same."

CEREUS PECTINATUS E.

Variety **CENTRALIS** Coulter.

"Plant 6-8 cm high; centrals usually 4, the lowest very short (3-4 mm) and correct, the upper 2 or 3 as long as the radials (sometimes longer), and recurved upward. Type, Wilcox of 1894 in Na hb. Arizona, near Fort Huachaca."—Coulter, Cont Na hb 3:386.

Cereus penilis.

Katharine Brandegee, Zoe 5:192 (Ag 1905), describes this as follows:—"Ribs 8-10 little elevated, often lost in low tubercles; areolae 3-4 mm. in diameter about 2 cm. apart on the same rib; spines rather slender, bulbous at base, at first yellow, becoming reddish-gray, on the young growth usually 8 radials, 1 central, all of about the same length—2 cm., in age somewhat longer, more numerous and arranged in about 3 series; flowers red, 5-6 cm. in length, with rather long and slender tube, the expansion not equalling the length; areolae of the ovary and tube with yellowish wool and slender chestnut spines 1 cm. or more in length; fruit globular, spinose, 1.5-2 cm. in diameter; seeds very numerous, black rugose, nearly 2 mm. long, very oblique at base. Collected by T. S. Brandegee, No. 246 of his "Flora of the Cape Region" in the Sierra de la Laguna, Baja California, since collected by him in the same place on several occasions, and also by Dr. C. A. Purpus. It is perhaps also the plant mentioned (Proc. Cal. Acad., ser. 2, 2:162) under **C. Phoenixus** var. **Pacificus** as growing on cliffs at Comondú. It is a very conspicuous plant as it hangs six feet in length, with many scarlet red blossoms from the mountain ledges. Wherever it grows on levels, however, the branches are more or less upright and a foot or more long. It probably belongs to the section *Echinocereus*."

C. PHOENICEUS E.

Variety **PACIFICUS** E. A 1:384 fdr.

C. PRINGLEI Wat 20:368. Z 1:26, 2:19.

CEREUS PRINGLEI S. Watson.

The Cardon is the giant cactus of Lower California and Sonora, where it forms forests, attaining a height of 20 to 35 feet. The ribs are usually 13, and it differs from the giant cactus of Arizona (*Cereus giganteus*) in that the spine bearing areolae on the ribs are connected by wooly grooves. The trunk is often 3 to 4 feet in diameter; the older portions of the branches usually quite thornless. The dead wood is used for fuel, but otherwise this mammoth production of the desert seems to be without use.

CEREUS QUERETARENSIS Weber.

"Tree-like, much branched, 6-8 m high; flowers 10-12 cm long; ovary covered with triangular fleshy scales which arise from a tubercle and bear axillary wool and spines; fruit densely covered with bunches of dark-yellowish or brownish spines bulbous at base. Type, Weber specimens in hb Mo bot gard. In the vicinity of Queretaro, Mexico, and cultivated along roadsides and fence rows."—Coulter, Cont Na hb 3:410.

CEREUS RIGIDISSIMUS Engelm.

Cereus pectinatus, var? *rigidissimus* E Am ac pr 3:279; Mexican boundary R, 31; collected writings 136, 195.

Echinocereus candicans of catalogs.

The Rainbow Cactus of Southern Arizona and Sonora is noted for the beautiful and varied coloring of the all radiating and interlocking, extremely rigid and acute spines, the latest ones of each season being rose-colored, and the earliest ones a pale yellowish, thus forming variegated rings around the stems. Flowers $2\frac{1}{2}$ -3 inches high, 2 or 3 in diameter.

C. SARGENTIANUS Orcutt. A 1:104.

C. SCHOTTII E. Wright, Z 1:105 (probably = *gemmatus*). Z 1:26, 2:20. B 1: 242.

Stems 8-10 from the same base, 4-10 feet high, 4-5 inches in diameter, ribs 4-7, areolae distant; spines on sterile part short, stout, 4-6 radials and 1 central; the spines on fertile part 1-4 inches long, pendulous, forming a reddish-gray beard, in which the flowers and small fruit are nearly hidden. Seeds large, with hooked cotyledons. Sonora.

Variety **AUSTRALIS** K. Brandegee.

"Stems more slender and upright than the northern forms: ribs in the fertile ends, often as many as 10; areolae smaller, and more distant, and the long spines commonly fewer and stouter; abortive spine or gland (?) below the acute base of areolae more conspicuous."—Katharine Brandegee, Zoe, 5:4.

Near Guaymas, Sonora. (Orcutt).

C. SCIURUS K Br. A 1:192 fdr.**C. STRIATUS** Br. Z 2:19.

Cereus digueti Weber, Mu d'hist nat, b, 1895, 319.

Apparently not rare in saline soil near Batamotal, Sonora, where it is known by the name sa-ra-ma-tra-ca; the tubers are

produced abundantly like small potatoes.

CEREUS TETAZO Weber.

"Stout, branching, 10-15 m high; flowers greenish-white, 6 cm long, in clusters of 10-20 from the youngest areolae and without any wool; fruit irregularly dehiscent, exposing the ripe pulp. Type, Weber specimens in hb Mo bot gard. Zapatalan, Jalisco."—Coulter, Cont Na hb 3:409.

C. THURBERI E. B 1:247. Z 2:20, 183.

The Pitahaya Dulce is an abundant species in Sonora and portions of Lower California, also said to occur in southern Arizona. It grows from 5 to 20 feet high, many stems 6 to 10 inches in diameter from the same base, bearing greenish or reddish white white flowers followed by large luscious fruit, rather too sweet it is said for northern palates. It was named in honor of George Thurber, a widely renowned botanist.

Cereus Thurberi littoralis.

Katharine Brandegee, Zoe 5:191 (Ag 1905), describes this as follows:—"Stems low branching from the base, the branches more slender than in the type and strongly curved. Flowers reddish, much darker than the type. Fruit smaller and said to be better flavored than typical *C. Thurberi*. On steep sea coast bluffs between San Jose del Cabo and Cabo San Lucas, Baja California, collected by T. S. Brandegee in 1892 (Proc. Cal. Acad., ser. 2, 3:223), and later by Dr. C. A. Purpus."

CEREUS TRIANGULARIS Miller.

Climbing over rocks and trees, joints 3-sided, $1\frac{1}{4}$ inches in diameter, 1 or 2 to many feet long, curving, the side next to tree or rock nearly flat, the others slightly concave; ribs acute, undulate-tuberculate, bearing in the depressions between the undulations small tomentose areolae $1\frac{1}{4}$ - $2\frac{1}{4}$ inches apart, with 3-4 stout bulbous brown or blackish spines 1-2 mm long. Flowered (28 Je 1902) in the night; fl a foot long; tube of cor 5 inches long, light apple green, spineless, with about 20 greenish yellow sepeloid scales, $\frac{1}{4}$ inch wide or less, acuminate, about 20 filaments white, 2 inches shorter than the petals, anthers sulphur yellow; style 9 inches long, $\frac{1}{4}$ thick, white; 25 spreading slender white stigmata three-fourths inch long; fruit light crimson, 3 inches in diameter, 5 in length, with about 20 sepeloid apple green scales, forming a pretty color-contrast; epidermis an eighth of an inch thick, pulp white, filled with about 3,000 small black seeds. (fruit bought in Tehuacan market for 6 cents, 28 Je 1902). Plant rather light green, the acute ribs narrowly margined with brown, 1-2 mm wide or less on either side. Pitahalla or

pitajaya of the Indians. States of Puebla and Oaxaca, Mexico (Orcutt 2710, 2711). *Cereus vagans*.

Katharine Brandegee, Zoe 5:191 (Ag 1905), describes this as follows:—"Stems prostrate, branching, light green, but the younger stems and joints often purple, reaching 1 m. in length, 20-25 mm. in diameter at base with roots springing from the whole length, texture rather dry and horny, ribs 8-9 rounded, elevated, well separated, not tuberculate; areolae of the same rib on old shoots 12-15 mm. asunder, woolly, the spines much shorter than the internodes. Spines slender but stiff, white or whitish, 3-6 mm. long, not regularly arranged radials 8-12 with 1-4 slender and longer bristly ones below, centrals 2-6 in two series. Collected by Mr. T. S. Brandegee on El Creston, an island in the harbor at Mazatlan, at various times, and later by Dr. C. A. Purpus, neither of them finding traces of flowers or fruit. It has been in cultivation in our green-house and in the open air for three years, and although it flourishes, some of the stems reaching 2 m. in length, it has not so far bloomed. I am sorry to have to describe a plant without flowers or fruit, but it is done in order to obviate a greater evil. It has gone into trade under this name and there is always danger of such plants being loosely described and no type kept."

C. VIRIDIFLORUS E. Br Colo 230.

C. viridiflorus Engelm., Synopsis 278, based on *Echinocereus viridiflorus*, Engelm., in Wislizenus' report 91. Ovate-globose, 3-8 inches high, 1-2 in diameter: spines purple and white, 1-3 lines long, central when present 6-10 long: flower an inch long and wide, outside greenish-brown, inside yellowish green, petals only 2 lines wide and 5 long: fruit half inch long, seeds tuberculate. Texas, New Mexico, Colorado, Wyoming. (3-5)

CEREUS WEBERI Coulter.

"Plant about 10 m high, with a regular candelabra form of branching (2 main branches each producing near the base 2 other branches, all ascending), branches and main stem of same diameter, angled and glaucous; areolae 3-5 cm apart; spines stout, bulbous at base; radials 10 cm long, laterally compressed, sometimes a little deflexed; flowers lateral,

white, 8-10 cm long; fruit 'as large as a small orange', covered with small scales bearing axillary wool and spines. Type, Weber, material in hb Mo bot gard. 'A few miles south of Tehuacan', Puebla, Mexico."—Coulter, Cont Na hb 3:410.

Arborescent, 25 feet high, trunk 1-2 feet in diameter, branching freely 3-5 feet from the ground, producing often 50 erect growing stems in candelabra form shading an area greater in diameter than the height of the tree. Branches a foot in diameter, 9-10 obtuse ribs with areolae $1\frac{1}{2}$ inches apart, when young, and densely tomentose at the base of spines; the older areolae but slightly tomentose, the bases of the spines often in close contact; spines ashy, bulbous at base, flattened or angular, strong: the central 2 inches long, 7-9 radials, usually 3 laterally disposed on each side and one below the central, and more rarely 1-2 shorter radials above; spines mostly deciduous on the trunk and older branches, the persistent areolae often enormously enlarged to a height and diameter of 1-2 inches with 10-20 formidable subulate spines, the longest 3 inches or more long. Flower white, much resembling that of *C. Pringlei*; fruit ripens in the middle of May, dull red, 3 inches long, 2 and $2\frac{1}{2}$ in greater and lesser diameter, pulp purplish, sweet, edible, but valued less than the pitalla and other cactus fruits. About 30 triangular scales, bearing in the axils densely woolly areolae with 35 or more slender, bristly, straight, white spines $\frac{1}{4}$ - $\frac{1}{2}$ inch long, form the armament of the fruit—the spiny areolae easily detached (or deciduous?) at maturity. Fruit said to be used in making a pleasant drink and the seeds also utilized. The erect growth of the numerous branches and the bright glaucous color renders this giant cactus everywhere conspicuous. State of Oaxaca, Mexico (Orcutt 2576). Known to the Indians as the 'cardon'.

CEREUS WEINGARTIANUS.

Of slender growth: stems about 10 lines in diameter, branched at base, at first bright green, shining, finally gray: ribs 4, notched: areolae $7\frac{1}{2}$ lines apart, $1\frac{1}{2}$ lines in diameter: spines 10, the outer 5-7 lines long, the 2 inner 10-12 lines long, subulate, straight, stiff, yellow with red-brown tips, afterwards red-brown, passing to gray-brown with age. Flower unknown. Hayti. Introduced by E. Hartmann (MfK, 1904, 155, f).

Genus CHAENACTIS De Candolle.

DC 5:659 (1836).

Ann herbs, often more or less woolly, with compound lvs and discoid hds mostly solitary and peduncled: inv Campanulate, the linear bracts =, uniserial, herbaceous: receptacle flat, naked: cor with sh tube, lg nar throat and sh teeth, those of outer row sometimes more ample and resembling rays: ak slender, smooth: pap of hyaline nerveless paleac.

C. ACHILLEAEFOLIA H & A bot Beech 354. B 1:391 Douglasil.

CHAENACTIS ASTEMISIAEFOLIA A. G.
G 10:74. B 1:391. Da 9. Ab 432. A 1:
255 d.

C. ATTENUATA G 10:73. B 1:390.
C. BRACHYPAPPA G 8:390. B 1:389.
C. CAREFOCLINIA G, bot Mex Bound
94. B 1:390. Cov 134.

Type locality: Gila and CD.

W. Arizona. S. Utah. CD (Parish). Cal-
amujet and Agua Dulce, Baja (Br).
C. DENUATA Nutt, Phil ac J sr 2, 1:
177 (1847). B 1:389.

C. DOUGLASSII H & A bot Beech 354. B
1:391. Z 2:163.

S. E. Cal. (Palmer). Wash; Mont; N. M.
C. FILIFOLIA Haw, in G Pl Fendl 98.
B 1:389 as tenuifolia.

C. FLORIBUNDA P 3:168.
CHAENACTIS FREMONTI A. Gray.
G 19:30 (1883). CD (Parish). Mohave.
Nev. Ar.

CHAENACTIS GLABRIUSCULA DC.
DC 5:659. Ab 432. B 1:389. Da 9.

Taller and more caulescent than C.
lanata, branching above, 2-3dm hi, herba-
ceous thinly floccose, becoming glab; ped
lg, stout; hds 15-20 mm hi; inv bracts
glab, broader, thickish, obtuse; mar-
ginal fls ample, much exceeding the
others; pap of 4 equal narly oblong
acutish paleae.

C. HETEROCARPHA G, Pl Fendl 98. B
1:389.

Parish, Z 5:119 says Ventura Co is
southern limit.

Variety **TANACTIFOLIA** G. B 1:389,
based on C. t.

CHAENACTIS HETEROCARPHA A. G.
CHAENACTIS LANOSA D. C.

DC 5:659. B 1:389. Da 9. Ab 432. A
256 d.

Hall U 125. Pin-cushion.

C. LACERA P 1:291.

Type locality: San Bartolome bay,
Baja!

C. MACRANTHA Eaton, bot King 171
(1871). B 1:390. Cov 4:134. P 4:98.
Mohave, Calif; Nevada; Utah.

C. ORCUTTIANA Parish. A 1:66 fdr.
Parish, Erythea 6:92, based on C. ten-
uifolia orcuttiana Greene, W Am Sci
3:157.—Cliffs facing the ocean, Enci-
nitas, Oceanside, Cal.

C. PARISHII G. A 1:66 d. Ha 125, CD.

C. PEDICULARIA P 4:98.

C. SANTOLINOIDES Greene. A 1:66
fdr. Ab 432.

CHAENACTIS STEVIOIDES Hook-Arn.
H & A bot Beech 353. B 1:390. Z 2:231.

C. SUPPEUTESCENS G 16:100. A 1:
66 d. B 2:457.

C. TANACETIFOLIA G 6:545. B 1:389
as heterocarpha variety t.

CHAENACTIS TENUIFOLIA Nutt.
Am, Phil sc tr NS, 7:375. B 1:389. Br
1:213 Rosa.

Variety **ORCUTTIANA** Greene. A 1:66
fdr, as Orcuttiana.

C. XANTIANA G 6:545. B 1:390. P
4:98.

CHAEOROPHYLLUM L, syst ed (1735),
C. CALIFORNICUM T, Pac Ry R 4:93.
B 1:263 as Podoscladium C.

CHAEADELPHIA G, ex Wat Am nat
7:301.

C. WHEELERII G as above. B 1:429.
CHAEOTICLOA.

C. GLAUCA Ab 25.

C. IMBERBIS Ab 25.

Genus CHAMAEBATIA Benth.

Bth 308 (1850).

CHAMAEBATIA FOLIOLOSA Benth.

Bth, lc, Par 94. B 1:173. Z 2:136.

Strawberry bush: strong-scented, vis-
cid.

CHAMAEBATIARIA Maxim in Act
Hort Petrop 6:225 (1879). = *Spiraea* fide
IK.

C. MILLEFOLIUM Maxim, lc, based on
Spiraea Millefolium T.

CHAMAECRISTA, Moench, Meth 272
(1794). = *Cassia* fide IK.

C. ABRICINOMENE P 4:32.

C. ANGUSTISSIMA P 4:30.

C. ASPERA P 3:243.

C. BIFOLIOLATA P 4:31.

C. BREVIFOLIA P 4:30.

C. BREVIFES P 4:31.

C. CALYCIODES P 4:32.

C. CAMPOBURI P 5:108.

C. CAPENSIS P 4:30.

C. CHAMAECRISTOIDES P 4:29.

C. CUNEATA P 4:31.

C. DEPRESSA P 3:242, 4:29 as chamae-
cristoides.

C. DIPHYLLA P 4:28.

C. FASCICALARIS P 3:242.

C. FLAVICOMA P 3:242.

C. FLEXUOSA P 4:27.

C. GLANDULOSA P 4:29.

C. HECATOPHYLLA P 4:32.

C. LINEATA P 4:31.

C. MIMOSOIDES P 4:27.

C. MULTIPINNATA P 3:243.

C. NICTITANS P 3:243, 4:29.

C. NIGRICANS P 4:30.

C. PALMERI P 3:243.

C. PATELLARIA P 4:32.

C. PAVONIS P 3:241, 4:28.

C. PERSOONII P 4:31.

C. PILOSA P 4:28.

C. PLUMOSA P 4:27.

C. PROCUMBENS P 4:28.

C. PUBERULA P 5:134.

C. ROTUNDIFOLIA P 4:31.

C. SERPENS P 4:29.

C. STRICTA P 4:27.

C. TRISTICULA P 3:242.

C. VIRGATA P 4:31.

Genus CHAMAECYPARIS Spach.

Hist Veg Phan 11: 329 (1842). = *Thuya*
fide IK.

CHAMAECYPARIS LAWSONIANA Par-
lat.

Ann Mus Stor Nat Fir 1:181 (1864). B
2:114, 483.

Cupressus lawsoniana Andr Murr in
Edinb New Phil J n sr, 1:292 t 9 (Ja-Apr
1855).

C. NUTKAENSIS Lindl & Gord, Hort sc
J 5:207 (1850). B 2:114. P 3:66. Z 2:
282. = *Thuya excelsa* fide IK.

CHAMAESABAZA G ex Franch & Sav,
Eu Pl J ap 2:454 (1876).

C. CORONOPUS G B 1:540 Rydberg,
Torr lc mem 4:371 "Cal." Parish, Z 5:
118 Ar.

C. NANA G, B 1:540. Cal.

CHARA.

CHARA FOETIDA Al. Br.

Da 20.

C. GYMNOFUSVariety **SANCTAE-MARGARITAE** Allen.

A 1:129 as S-m.

C. HIESUTA Allen. A 1:129 d.**C. SANCTAE-MARGARITAE** Rob. A 1:129 d.Genus **CHEILANTHES** Swartz.**CHEILANTHES CALIFORNICA** Mett.

cheil 44. B 2:336. Da 20. Z 1:147. 2:131.

Greene, Cal ac b 2:415 Cruz.

Hypolepis californica Hook sp Fil 2:71 (1858).

Lace fern. Southern and Baja Cal.

CHEILANTHES CLEVELANDI Eaton.

B 2:338.

Southern and Baja California.

CHEILANTHES COOPERAE Eaton.

B 2:337. Da 20.

Central and southern California.

C. ELEGANS Kuhn Beitr 8. B 2:338 as myriophylla.**C. FENDLERI** B 2:338, not Cal. Da 20.**CHEILANTHES FIBRILLOSA** Davenport.

San Jacinto mts, California (Parish).

C. GRACILLIMA Eaton. B 2:337. Z 2:131.**CHEILANTHES MYRIOPHYLLA** Desv.

B 2:338. Z 2:131. Br 1:205 Cruz; 218 Rosa.

Texas; Arizona; southern and Baja Cal.

CHEILANTHES PARISHII Davenport.

Riverside Co., Cal. (Parish).

C. PRINGLEI Z 2:150.**C. VESTITA** Brackenridge, Ferns US

Exp Exp. B 2:338 as gracillima.

CHEILANTHES VISCIDA Davenport.

Torr cl b 6:191. B 2:337.

Colorado Desert near Whitewater.

CHEIRANTHODENDRON B & H Gen

1:212. = cheirostemon Humb & Bonpl

fide IK.

C. CALIFORNICUM Baill Hist Pl 4:70.

B 1:88 as Fremontia California.

CHEIRANTHUS L Gen ed 1, 195 (1737).

A 1:122. 123 d.

C. ALPESTRIS M 1:144.**C. AMOPHILUS** M 1:52.**C. ANGUSTATUS** Greene. A 1:122 d.

Ab 179. P 3:132.

C. ARIDUS P 4:198.**C. ARENICOLA** P 3:131.**C. ARGILLOUS** P 3:136.**C. ARKANSAUS** P 3:135.**C. ASPER** C & S in Linnaea 1:14 (1826).

B 1:35. Da 2. P 3:131. 133. Z 2:161. 339.

Par 136. Br 1:207 Rosa.

C. ASPERAS Nutt. Nutt Gen 2:436. A

1:123 as Erysimum asperum.

C. ASPERIMUS P 3:133.**C. CALICIFORMIS** P 3:133.**C. CAPITATUS** Dougl Hook Fl 1:38. P

3:131. B 1:36 as asper C & S.

C. ELATUS P 3:155, based an Erysimum**C. ERYSIMOIDES** P 3:138.**C. EKEELI** P 4:235.**C. GRANDIFLORUS** M 1:145.**C. NEVADENSIS** M 1:52.**C. OBLANCEOLATUS** M 1:141.**C. RADICATUS** M 1:144.**C. INCONSPICUUS** P 3:134.**C. INSULARIS** P 3:131.**C. MENZIESII** B 1:35.**C. NIVALIS** P 3:137, based on Erysimum

asperum vah. pumilum Porter & Coville.

C. OCCIDENTALIS P 3:132.**C. PERENNIS** P 3:132.**C. SUPFRUTESCENS** Ab 179. A 1:122

fdr.

C. SYRTICOLA P 3:136, based on

Erysimum syrticola.

C. TURBITOIDES Lam Enc 2:716. P 3:

138.

C. WHEELERI P 3:135, based on

Erysimum W.

CHEIRINIA Link En 2:170 (1822).**C. CHEIRANTHOIDES** Link. P 3:138 as

cheiranthus turritoides.

CHELONE L, syst ed 1 (1735).**C. CENTRANTHIFOLIA** Bth, Hort ac

tr NS 1:481. A 1:226 as Pentstemon

centranthifolius.

C. NEMOROSA Dougl, bot reg t 1211.

B 1:556. 2:473.

CHENOPODIA.

Moq in DC 13(2):159 (1849).

C. MOQUINI T, Pac Ry R 7:18. B 2:59.

P 1:264 as Gueda M (=S. Torreyana

fide IK).

Genus **CHENOPODIUM** Tournefort.

L, syst ed 1 (1735). A 1:217 d.

CHENOPODIUM ALBUM Linn.

L, sp pl 219. A 1:217 d. B 2:47. Ab 124.

Da 15. Z 1:125. Br 1:216 Rosa. Greene,

Cal ac b 2:4111 Cruz.

Coville, CNH 4:179.

Variety **VIRIDE** Moq.

A 1:218 d. Da 15. Ab 125.

Abrams, Fl LA 125. Vernon (Dav-

idson).

CHENOPODIUM AMBROSIOIDES Linn.

L, sp pl 219. Greene, Cal ac b 2:411

Cruz. Br 1:216 Rosa. Ab 125. =

ambrosioides fide IK.

C. ANTHELMINTICUM L, sp pl 220. =

ambrosioides fide IK.

Variety **HASTATUM** Moq. B 2:48 as

Californicum.

C. BOTRYS L, sp pl 219. B 2:47.**CHENOPODIUM CALIFORNICUM** S. W.

Wat. B 2:48. A 1:218 d. Da 15. Ab

125. P 1:93 Mig; Cal ac b 2:411 Cruz.

Block, Erythraea 2:10, medicinal note

on root.

Coville, CNH 4:179.

Blitum Californicum Watson, Am ac

pr 9:101 (1874).

Type locality: "Cal, from the Sacra-

mento to Fort Tejon and SD."

C. CAPITATUM Aschers, Fl Brandenb

572. B 2:48.

C. CARINATUM R Br, Prod 407. B

2:48.

C. CORNUTUM B & H ex Wat, B 2:482.**CHENOPODIUM FREMONTI** S. Watson

Watson, Bot King Exp 287 (1871).

B 2:47. A 1:218 d.

Type locality: (from Fremont's spec-

imen) "on the Noru Plattt.

Coville, CNH 4:179. Pandamint mts.

C. HUMILE Hook Fl 2:127. B 2:48 as

rubrum var. humile.

C. HYBRIDUM L, sp pl 219. B 2:47.**C. LEPTOPHYLLUM** Nutt ex Moq in

DC 13(2):71. B 2:47.

C. MOQUINI T, Pac Ry R 7:18. B 2:

59. P 1:264 as Suaeda M (= S. Tor-

reyana fide IK).

CHENOPODIUM MURALE Linn.

L, Sp Pl 1:219 (1753). Eu.

B 2:46. A 1:218 d. 21:125. Da 15. Ab

125. P 1:267 Cedros; 92 Mig; Cal ac b 2:411 Cruz. Asia.

Coville, CNH 4:180.

Eu. Common in waste places.

CHENOPODIUM RUBRUM L.

A 1:218 d. Ab 125. B 2:48.

Variety **HUMILE** B 2:48.

C. SPINOSUM Hook Fl 2:127. P 4:225 as Eremosemium spinosum.

C. VIRIDE L, sp pl 219. Da, Er 1:99, LACo. = album fide IK.

Genus CHIOPSIS Don.

D Don in Edinb Phil J 9:261 (1823).

C. LINEARIS Sweet, Hort Brit, ed 1, 283. B 1:587 as saligna

CHIOPSIS SALIGNA Don.

D Don as above. B 1:587.

"Mexicans use the fls in fevers and as a stimulant in cardiac diseases."—

Havard. Desert Willow. Ariz. CD!

NM. Tex. Mex. Cal. Calamujuet.

Baja (Br).

Genus **CHIMAPHILA** Pursh.

Per herbs with decumbent sts, ascending leafy branches, opp or verticillate evergreen sh-petioled serrate lvs, and spreading or nodding w or p fls in terminal corymbs or rarely solitary; pedicels mostly bracteolate; ex 5-cleft or parted, persistent; pet 5, concave, nearly orbicular, sessile, spreading or recurved; sta 10, fil com dilated above and somewhat pubescent; ova globose, 5-lobed, 5-celled; sty very sh, obcomis; stig large, orbicular, 5-crenate.

C. CORYMBOSA Pursh, Fl 1:300. B 1:459 as umbellata.

CHIMAPHILA MENZIESII Spreng.

Syst 2:317. Par 106 t. B 1:459. Ab

295, Mt Wilson under pines.

Pipsissewa. Ha U 100.

More or less branched from base, ½ dm hi; lvs ovate to oblong-lanceolate, 12-36 mm long, sharply serrulate, upper surface oft mottled with w; ped 1-3-fid; bracts ovate or roundish; fil slender, with a round dilated portion above the middle, villous; fls about 1 cm in diam. Sber mts; Cuyamaca!

C. UMBELLATA Nutt Gen 1:274. Eu. Asia B 1:459. Par 106. Z 2:232.

CHIONANTHUS Gaertn Fruct 1:189 t 39 (1788).

C. FRAXINIFOLIUS K 5:18. B 1:472 as Fraxinus dipetala (Cur 1:142 as Fraxinus d, var. brachyptera).

CHIONIA Moc & Sesse, DC 1:707. (Fr, Hym 277, is a fungus).

CHLOBAEA Lindl, Brand Sr J, Roy Inst NS, 1:47 (1827).

C. AUSTINAE G 12:83. = Cephalanthera Oregana fide IK. B 2:137. M 1:49 as E burophyton A.

CHLORIS ELEGANS HBK.

Ft. Yuma, Cal. (Or 2032). Mexico.

Genus CHLOROGALUM Kunth.

Sts from a fibrous-coated bulb, tall almost lfless paniculately branched above, branches loosely racemose; basal lvs tufted lg linear. st lvs much reduced; bracts sm, scarious; pedicels jointed at summit; perianth w or p'lish, persistent and at length twisted over ova, its seg distinct ligulate spreading,

with 3 closely approximate nerves down the middle; sta 6, inserted on base of seg; anth versatile; sty lg-fliform, slightly 3-cleft; cap broadly turbinate, 3-valved, loculicidal; srs 1 or 2 in each cell, obovate, somewhat rugose.

Kunth, En 4:681 (1843).

CHLOROGALUM ANGUSTIFOLIUM K. K 2:104. B 2:160.

C. DIVARICATUM Kunth En 4:682. = pomeridianum fide IK.

CHLOROGALUM LEICHTLINII Baker. Gard Chron 1874, 1:689.

CHLOROGALUM PARVIFLORUM S. W. Wat 14:243. B 2:160. SD mesas!

C. **POMERIDIANUM** Kunth, En 4:682. A 1:183 d. B 2:159. Da 17. Z 2:166, 375. Ab 84 t. Bloch, Er 2:10, note on medicinal value. Amole.

CHLOROPYRON Behr, Cal ac pr 1:61 (1855).

C. PALUSTRE Behr as above. Cur 1:145 as Cordylanthus maritimus. B 2:622 as Orthocarpus.

CHONDROSUM Desv in Nov B Sc Philom 2:188 (1810). = Bouteloua fide IK.

C. OLIGOSTACHYUM T in Marcy R 300. B 2:291 as B. O.

C. POLYSTACHYUM Bth Voy Sulph 56. B 2:291 as B. p.

Genus CHORIZANTHE R. Brown.

Bth, Linn sc tr 17:416 t 19 (1836). A 1:214 d.

C. **ANGUSTIFOLIA** Nutt, Phil ac J n s, 1:167.

CHORIZANTHE BREVICORNU Torr. T, bot Mex Bound 177. B 2:38, 481.

Cov 4:189, Death valley. CD! Ut. Ar. Type locality: "on the Gila river."

C. **BREWERI** Wat 12:270. B 2:36.

CHORIZANTHE CALIFORNICA A. G. G, Boston sc nat hist 7:147. B 2:35. Da 15. Ab 113. A 1:214 d.

Abrams, Fl LA 113.—"Common on sandy soil."

SBER to San Diego; Da 15.

C. **CLEVELANDI** Parry, Dav ac 4:62. Jepson, Er 1:10. 12.

C. **COMMISURALIS** Remy, Gay Fl Chil 5:287. Chili.

CHORIZANTHE CORRUGATA T. & G. T & G, Am ac pr 8:198. B 2:39. CD!

CD! Cajon de Santa Maria (Br).

C. **DASYACANTHA** Phil in Linnaea 33: 227 Chili.

C. **DIFFUSA** Bth 333. B 2:36, 481.

C. **DISCOLOR** Nutt, Phil ac J ns, 1:167.

C. **DOUGLASHII** Bth, Linn sc tr 17:418. B 2:35.

CHORIZANTHE FERNANDINA S. Wat. Wat, B 2:481. Da 15. Ab 114. A 1:219 d.

Baja (Or 1369), near Quintin!

San Fernando, Cal. (Mrs. A. E. Bush); Quintin! Da 15.

Chatsworth Park.

CHORIZANTHE FIMBRIATA Nutt. Phil ac J ns, 1:168. B 2:36.

"Dry hills around SD, in such profusion as to give them a red appearance"

—Thurber. Quintin! CD (Parish 533); Rosario, Baja; Da 15. Ha U 72.

C. **FLAVESCENS** Phil, Linn 33:226 Chili.

- C. FLAVA** Br 2:202, Calmalli.
C. FRANKENIODES Remy, C Gay Fl Chili 5:288. Chili.
C. GLABRESCENS Bth, Linn sc tr 17: 418 Chili.
C. KINGII Phil and univ Chili (1873) 536. Chili.
CHORIZANTHE LACINIATA Torr. T. Pac Ry R 7:19, B 2:37. Potrero (Orcutt); CD slopes.
C. LASTARRIAEA Parry, Dav ac pr 4:63.
CHORIZANTHE LEPTOCEROS S. Wat. Wat 12:269. B 2:34. Da 15. Ab 113. A 1:214 d.
 Abrams, Fl LA 113.—"on dry sandy plains from San Gabriel eastward."
 Near Sber (Parish 829, Parry). Da 15.
C. MACRAEI Bth, Linn sc tr 17:417. Chili.
C. MEMBRANACEA Bth, Linn sc tr 17: Chili. B 2:35.
C. MUTABILIS Br 2:203, Baja.
C. NUDICAULE Bth 332. = Douglasii fide IK.
C. NUDICAULE Nutt, Phil ac J, ns, 1: 166.
CHORIZANTHE ORCUTTIANA Parry. Dav ac pr 4:54. A 1:81 fdr.
C. PALMERI Wat 12:271. B 2:36.
CHORIZANTHE PARRYI S. Watson. Wat 12:271. B 2:37. Ab 114. A 1:214 d.
C. PANICULATA Bth, Linn sc tr 17:417. Chili.
C. PEDUNCULARIS Bth, Linn sc tr 17: 416. Chili.
CHORIZANTHE PERFOLIATA A. Gray. Bost sc nat hist 7:148. B 2:34. Cov 4: 189, Tehachapi canyon.
 Mohave (Orcutt).
CHORIZANTHE POLYGONOIDES T.-G. G 8:197. B 2:38.
 Mesas SD! Chico, Cal (Parry)
CHORIZANTHE PROCUMBENS Nutt. Phil sc J, ns, 1:167. Da 15. Ab 114. B 2:37. A 1:215 d.
 Boston sc nat hist 7:148. = Xanti fide B 2:37. T & G, Rev 195 as staticoides.
C. FULCHELLA Br 2:203, Baja.
C. FUNGENS Bth, Linn sc tr 17:419. B 2:37.
C. RAMOSISSIMA Bth lc, 417. Chili.
CHORIZANTHE RIGIDA T. & G. Am ac pr 8:198. B 2:38.
 So Utah; CD! El Pozo Aleman, Baja (Br).
C. ROSEA Phil in Linnaea 33:225. Chili.
CHORIZANTHE SPINOSA S. Watson. Wat B 2:481. A 1:215 d.
 Parish, Zoe 5:113, not Sber but Mohave.
CHORIZANTHE STATICOIDES Benth. Bentham, Linn Tr 17:418.
 Da 15. Ab 113. B 2:37. A 1:215 d. Par 224. Greene, Cal ac B 2:411 Cruz. Br 1: 216 Rosa.
C. STELLULATA Bth 333. B 2:35, 481.
C. TENUIS Phil in Linnaea 33:227. Chili.
CHORIZANTHE THURBERI S. Watson. Wat 12:269. B 2:34. Da 15. Ab 113. A 1:215 d.
 Coville, CNH 4:189.
 Centrostegia Thurberi Bentham, in DC Prodr 14:27 (1856).
 Type locality: "In collibus arenosis

- ad San Felipe Californiae."
 Mohave, near Colorado river (Parish 895).
 Variety **CRYPTANTHA** Curran.
 Mohave near Lancaster. (Curran). A 1:216.
C. UMBELLATA Phil, Linnaea 33:225. Chili.
C. UNCINATA Nutt Phil ac J ns, 1:167.
C. UNIARISTATA T & G, Am ac pr 8: 195. B 2:38. A 1:215.
C. VAGINATA Bth, Linn sc tr 17:417, Chili.
C. VALIDA Wat 12:271. B 2:36.
C. VIRGATA Bth, Linn sc tr 17:416. Chili.
CHORIZANTHE WATSONI T. & G. G 8:199. B 2:39, 481. Cov 4:189.
 Mohave; CD; Nevada deserts.
C. WHEELERI Wat 12:272. B 2:38.
CHORIZANTHE XANTI S. Watson. Wat 12:272. B 2:37, 481. Ab 114. A 1: 216 d.
 Type localities: "near Fort Tejon," "Sber," and "San Geronio," Cal. Coville, CNH 4:190.
CHRYSAMPHORA Greene. Based on Darlingtonia C.
CHRYSAEASIS Desvaux (1827).
C. AGRARIA P 3:205 based on Trifolium agrarium Dod.
C. AUREA P 3:204 based on Trifolium aureum Pollich.
C. BADIA P 3:206 based on Trifolium badium Schreb.
C. CAMPESTRIS Desv, Fl anjou 338 (1827). P 3:205 as agaria.
C. DUBIA P 3:206 based on Trifolium dubium Sibth.
C. PROCUMBENS Desv, Fl anjou 338. P 3:206. (Trifolium procumbens L.).
C. SPADICEA P 3:205 based on Trifolium spadiceum L.
CHRYSANTHEMUM Tourn, ex L, syst ed 1 (1735).
 Vasilit. Z 1:86 (escapes from cult).
C. LEUCANTHEMUM L, sp pl. Eu. Asia. B1:401.
CHYSOCOPTIS Nutt Phil ac J 7:8 t 1 (1834). = Coptis fide IK.
C. OCCIDENTALIS Nutt, lc. B 2:427 as C o.
CHRYSOOMA L, Gen ed 1, 248 (1737), in part.
C. GRAVEOLENS T, NY Lyc ann 2: 211. B 1:317 as Bigelovia g.
C. NAUSEOSA Pursh Fl 2:517. B 1: 317 as Bigelovia graveolens (as to Nutt, Gen).
 Genus **CHRYSOOMA** Nuttall.
 Nutt, Phil ac J 7:67 (1834). = Solidago
 Low evergreen shrubs with mostly nar subterete punctate lvs and terminal cymose or corymbose clusters of sm hds: Inv turbinate, its bracts mostly lanceolate, very reg-imbricated, margins subscarious: Fls permanently y: Disk fls slender with subcampanulate throat and deeply cleft limb: sty-appendages filiform, acuminate, hirsutulous: Ak more or less distinctly prismatic: Pap of scabrous slender bristles, dull w or y'ish, becoming r'dish.
C. COOPERI Greene, Er 3:12 based on Bigelovia Cooperi G. Providence mts, Cal.

CHRYSONA CUNEATA Greene.

Greene, Er 3:11. A 1:194 d. Ab 398, Gabriel.

Aplopappus cuneatus A. Gray, Am ac pr 8:635 (1873).

Type locality: "California, in Bear Valley, alt 4,500 ft." Sber Co. Variety **SPATHULATA** Greene. Greene, Er 3:11. A 1:194.

Bigelovia spathulata Gray Am ac pr 11:74 (1876)

Bigelovia rupestris Greene, Bot gaz 6:183 (1881).

Lower California, Arizona.

CHRYSONA ERICOIDES Greene.

A 1:194 d. Ab 398.

Abrams, Fl LA 398. Frequent on bluffs and sand-dunes along the sea-shore.

Ericameria microphylla Nuttall.

C. PALMERI Greene. A 1:194 d. Ab 398.

CHRYSONA PANICULATA Greene.

Greene, Erythea 3:12, based on *Bigelovia paniculata* Gray Am ac pr 8:644 (1873).

A 1:195.

Aster asoe OK Rev gen 315.

Southern California eastward.

CHRYSONA PARISHII Greene.

Greene, Erythea 3:10, based on *Bigelovia parishii* Greene, Torrey cl b 9:62 (1882).

A 1:195.

Abrams, Fl LA 398. Gabriel; Sber.

Low mts of southeastern Calif.

CHRYSONA PINIFOLIA Greene.

Greene, Erythea 3:12, based on *Aplopappus pinifolius* Gray, Am ac pr 8:636 (1873).

A 1:195 d. Ab 398.

Aster pityphyllus OK, Rev gen 316.

Interior of Southern Cal.

CHRYSONA TERETIFOLIA Greene.

Greene Erythea 3:12, based on *Linosyris teretifolia* D-H, Pac Ry R, 5:9 t 7 (1855).

Bigelovia teretifolia Gray, Am ac pr 8:644 (1873).

Aster durandii OK Rev gen 316.

Mts of Mohave Desert region.

Genus **CHRYSOPSIS** Nuttall.

CHRYSOPSIS Ell Sketch 2:333 (1824).

Per herbs with sts many from the rt, very leafy, with alt sessile lvs: hds with or without rays, solitary or in corymbs; inv-bracts in several or with papery margins and no g tips: fls y: ak compressed, hairy: pap double; inner a row of lg rough rusty bristles, outer a row of sh nar chaffy scales or bristles. **C. ACAULIS**. Nutt. Phil ac J 7:33. = *Aplopappus* a fide IK.

C. ALPINA Nutt, Phil ac J 7:34 t 3 f 2. = *Aster scopulorum* fide IK. P 3:245 as *Ionactis* a.

C. BAKERI P 4:153.

C. BOLANDERI G 6:543. = *villosa* fide IK. B 1:309 as *sessiliflora* var. *Bolanderi*.

C. BREWERI G 6:542. B 1:310.

C. CAMFORUM P 3:88. Ill. Mo.

C. CANESCENS T & G Fl 2:256. = *villosa* fide IK. (DC 5:328 = *Erigern filifolius* fide B 1:329.)

E. ECHIOIDES Bth Voy Sulph 25. B 1:309 as *sessiliflora* var. *echioides*. = *villosa* fide IK.

C. ERICOIDES T & James ex Eaton bot ed 8:195. = *Aster ericaefolius* fide IK.

CHRYSOPSIS FASTIGIATA Greene. P 3:296. Ab 396. A 1:57 fdr. Ha 126. **C. FALCATA** Ell Sketch 2:336. = *villosa* fide IK.

C. FLORIBUNDA P 3:101.

C. FOLIOSA Nutt, Am Phil sc tr, sr 2, 7:316. = *villosa* fide IK.

C. GOSSYPINA Ell Sketch 2:237.

C. GRAMINIFOLIA Ell Sketch 2:234.

C. HISPIDA DC 7:279. = *villosa* fide IK.

C. HIRSUTA P 3:296, 4:154.

C. HIRSUSSIMA P 4:153.

C. LINARIIFOLIA DC 5:277. P 3:245 as *Ionactis linariifolia*.

C. NIVEA P 3:43.

C. OBOVATA Nutt Gen 2:152. = *Aster reticulatus* fide IK. P 3:53 as *Daelingeria reticulata*.

C. OREGANA G 6:543. B 1:309. Jepson, Er 1:13.

C. PEDUNCULATE P 4:154.

CHRYSOPSIS SESSILIFLORA Nuttall. Am Phil sc tr 7:317 (1840). A 1:57 d. B 1:309.

C. VILLOSA DC 5:327; 7:279. B 1:309.

Ill. Ala. Mex. British Cal.

CHRYSOPSIS VILLOSA Nutt.

British Columbia to Mexico; Ill to Ala. Variety **ECHIOIDES** G. Da 8. Baja!

Ar. Sacramento.

Variety **SESSILIFLORA** G. Baja! Da 8. Mendocino Co.

C. WRIGHTII G, syn Fl suppl 1(2):445.

Greene, Er 2:106 ("Hl mts of so Cal.").

CHRYSOPLERIUM Tourn ex L, syst 1 (1735).

C. GLECHOMAEFOLIUM Nutt ex T & G Fl 1:589. B 2:444.

CHRYSOTHAMNUS Nutt, Am Phil sc tr ns, 7:323 (1841). = *Bigelovia* fide IK.

C. ANGUSTUS P 5:64.

C. APPENDICULATUS M 1:6.

C. ARIZONICUS P 4:42.

C. BAKERI P 4:152.

C. COLLINI P 3:24.

C. CONSIMILIS P 5:60.

C. CONFINIS P 5:62.

C. DEPRESSUS Nutt, Phil ac J ns, 1:171. = *depressa* fide IK.

ac J, ns, 1:171. = *B. depressa* fide IK.

C. DRACUNCULOIDES Nutt, Am Phil sc tr, ns, 7:324. B 1:317 as *B. graveolens*. (= *B. d.* fide IK.)

C. FALCATA P 5:62.

C. FORMOSUS P 4:41.

C. GNAPHALODES P 4:42.

C. GRAVEOLENS Greene, Er 3:108. *Bigelovia graveolens* var. *glabrata* G 8:645 (1873).

C. GREENEI P 4:153.

C. HUMILIS P 3:24.

C. LAETEVIRENS P 5:61.

C. LANCEOLATUS Nutt, Am Phil sc tr, ns, 7:324. = *B. viscidiflora* fide IK.

C. LAARICINUS P 5:110.

C. LATUSQUAMEUS P 4:42.

C. LEUCOCALADUS P 5:59.

C. LINIFOLIUS P 3:24.

C. MACCOUNII P 5:163.

C. MAQUIANUS P 5:60.

CHRYSOTHAMNUS

Greene.

MOHAVENSIS

"Rush-like branches few, stout, flexuous, glutinous, sparingly leafy: leaves an inch long: involucre bracts obtuse: corolla-lobes narrowly lanceolate, glabrous. Mohave desert in Calif.; also in adjacent Nevada."—Greene, *Erythraea* 3:113.

Bigelovia mohavensis, Greene in Gray *Fl* 138 1884).

Aster mohavensis OK rev gen 318.

C. ORTHOPHYLLUS P 5:62.

C. PINIFOLIUS P 5:60.

C. PLATTENSIS P 4:42.

C. SPECIOSUS Nutt, Am Phil sc tr ns, 7:329. B 1:317 as *B. graveslensis*. = *B. viscidiflora* fide IK.

C. TORTUOSUS P 5:63.

C. VIRENS P 5:61.

C. VISCIDIFLORUS Nutt, Am Phil sc tr ns, 7:324. = *B. viscidiflora* fide IK.

CHRYSEURUS Pers Syn 1:80 (1805).

C. AUREUS Beauv, *Agrost* 123. = *Lamarkia aurea* fide B 2:299.

C. CYNOSUROIDES Pers Syn 1:80. = *Lamarkia aurea* fide IK.

CHTHAMALIA Decne in DC 8:605 (1844).

C. BIFLORA Decne, as above. = *Gonolobus pubiflorus* fide IK. M 1:2 as *Vincetoxicum pubiflorum*.

CICENDIA Adams Fam 2:503 (1763).

C. EXALLATA Griseb, Hook *Fl* 2:69 t 157 A. B 1:480 as *Erythraea Douglasii*.

C. QUADRANGULARIS Griseb, lc. B 1:480 as *Microcala* q.

CICHOBIUM L, syst ed 1 (1735). A 1:288 d.

C. ENDIVIA L, sp pl 813. B 2:460.

CICHOBIUM INTYBUS L.

L, sp pl 813. A 1:253 d. B 2:460. Z 2:126. Par 304. Parish, Er 3:62, "occasional in the streets of Sber."

Abrams, *Fl LA* 444, occasional in waste places.

Genus **CICUTA** Linnaeus.

A 267. d 1 271, 2 1-11.

CICUTA BOLANDERII S. Wats.

Wat II 139, A 1 267 d, Da 7.

CICUTA MACULATA Linn.

Sp pl 256 A 1 267 B 1 260 P 1 271, 2 9.

Sber (Parish 975). Through the U. S.

CICUTA OCCIDENTALIS Greene.

A 1 267 d P 2 7.

Abrams, *Fl LA* 285. Frequent in marshes toward the coast.

Genus **CLADOTHRIX** Nuttall.

CHLADOTHRIX LANUGINOSA Nutt.

CD Ark Tex B 2 43

CHLADOTHRIX OBLONGIFOLIA Nutt

Wat 17 376 SCer co

CLARKIA Pursh *Fl* 1: t11 (1814).

Erect @ with brittle sts & alt lvs; fls showy, in terminal racemes (nodding in the bud); cx tube above ova, obconical or much prolonged & almost filiform, its lobes reflexed in fl or remaining united & turned to one side; pet 4, p or rose,

with claws, limb entire or lobed; sta com 8, those opp pet oft rudimentary or 0; ova 4-celled; sty elongated, stig with 4 broad lobes; cap linear or attenuate above, straight or somewhat curved. coriaceous, somewhat 4-angled & 4-valved; sds num, angled or margined.

CLARKIA ELEGANS Dougl.

Glab or somewhat puberulent, glau, 3-15 dm hi, simple or somewhat branching, rather stout & rigid; lvs broadly ovate to linear, repand-dentate; pet entire. the rhomboid limb about = linear clsw; fil all perfect with a densely hairy scale on each side at base; cap 1-2 cm lg stout & sessile, 4-angled, somewhat curved, oft hairy.

Genus **COLEOGYNE** Torrey.

Cx persistent. 4-parted; lobes large, ovate, imbricated, with a membranaceous margin, colored within. Pet o. Stanum, inserted upon the base of a tubular torus which includes the ova. Carpels solitary (rarely 2), glab, oblg: sty lateral, very villous at base; twisted, exserted, persistent: stig decurrent: ovule 1, ventrally attached opp sty base. Fr a coriaceous ak, glab, included. Sd with a rather spongy testa, without albumen: radicle superior. One sp.

C. RAMOSISSIMA T, Pl Frem 8 t 4. Parry, Am nat 9:270. B 1:174. Mohave, Nev, Ar.

Genus **COLEOSANTHUS** Cass.

Herbaceous or partly shrubby @ with opp or alt lvs & discoid hds of whitish or pink fls in panicles or cymes; inv bracts imbricated in sr, striate; receptacle flat or convex; ak 10-ribbed; pappus a row of num rough or serrate bristles.

Cass, soc *Philom* b 67, 1817; dict 10:36.

Brickellia Elliott, 1824.

C. KNAPPIANA Greene, *Erythraea* 1:54.

Based on *Brickellia Knappiana* Drew, Pittonia 1:260:—"Shrubby and low (perhaps a ft hi), the slender stems with a smooth w bark: branchlets and floral lvs hispidulous-scarious, somewhat glutinous: lvs i i long, lanceolate, remotely & coarsely toothed, or subentire. hds num,

crowded upon the paniced branchlets, 4 lines long; bracts of the inv multiserial, erect, obtuse, conspicuously 3-nerved: fls about 5: ak appressed-setulose."

Type locality: near "Mohave river, Cal."

C NEVINII Kuntze, rev gen pl.

Based on *Brickellia Nevinii* Gray.

Herbage w-woolly; lvs repand-dentate, hds 30-40-fld. Newhall, Cal.

Owing to an oversight, discovered too late, over 200 pages of MS are omitted here, & left to appear in a supplement.

ECHINOCACTUS. A large genus of some 200 or more species, among them some of the most handsome and curious forms of plant life known.

"Flowers about as long as wide. Ovary covered with sepaloïd scales, naked or woolly in their axils. Fruit succulent or sometimes dry, covered with persistent calyx-scales, sometimes enveloped in copious wool, and usually crowned with the persistent remnants of the flower. Seed obliquely obovate, black. Embryo curved over the small albumen; cotyledons parallel to the sides of the seed.—Mostly large, sometimes gigantic, globose or depressed, or ovate, or rarely subcylindric, simple or very rarely cespitose; bunches of spines on the more or less vertical ribs. Flowers contiguous to and above the spines, on the latest growth of the plant, often from the nascent woolly areolae and therefore more or less vertical, open only in sunlight."—E.

ECHINOCACTUS CATAPHRACTUS.

Dwarf, globose or depressed-globose: ribs up to 10, with curious half-moon shaped brown to violet blotches below the areolae: spines 5-7, straight or somewhat curved, 7½-10 lines long, bright golden; flowers produced in the depression at the summit of the plant, otherwise undescribed. Probably from Paraguay. Introduced by E. Heese (MfK 1904, 172).

ECHINOCACTUS CHRYSACANTHUS O.

Globose to cylindrical, with about 18 ribs and 10 flexuous annulated central spines 2 inches long, and 4 to many slender white radial spines. Flowers satiny yellow, more rarely crimson. Cedros Island.

ECHINOCACTUS CUMINGII Hopff.

Bolivia, South America.

VARIETY FLAVISPINA.

Stem scarcely depressed at summit, which is overtopped by yellowish spines. Introduced by K. Hirscht (MfK 1904, 77).

E. cylindraceus. In 1852, in the American journal of science, series 2, 14:338, Engelmann published this as a questionable variety of *E. virides-*

cens, stating that it was distinguished by its oval or cylindrical shape, larger size, and longer spines. It was found near San Felipe, on the eastern slope of the California mountains, by Dr. C. C. Parry. Mature specimens are usually 2-3 feet high and a foot or more in diameter, cylindrical, simple, with a woolly spineless depressed top and 21-27 obtuse somewhat tuberculated ribs, but one specimen observed measured a little over ten feet high and 3 feet in greatest diameter, and occasionally specimens that have been injured are found densely proliferous at base. Young plants globose, 13-ribbed, with spines often of an ivory white, yellowish, or of a beautiful reddish color, or variously colored, but in age all spines become yellowish, and are stout, annulated, recurved or flexuous, the 4 centrals very stout, the 12-18 radials with the lowest usually hooked. Flowers lemon yellow, 2 inches long, with 40-50 rounded fringed sepals on the ovary, and about 25 fringed petals; the stigmata 12-15, linear; the numerous black seeds at maturity are enclosed dry and loose in the fleshy scaly envelope, which is pleasantly acid. *E. Leopoldi* Hort. Belg. is cited by Foerster, in his handbuch, ed. 2, 473, as a synonym. (10-100)

ECHINOCACTUS DAMSII.

Simple, depressed-globose, sparingly tuberculate, ribs 10: spines 8, short, straight, all radial: flowers numerous, produced near the summit of the plant, 2½-2¾ inches long, white, green outside. Paraguay (MfK 1904, 119, f.).

E. Emoryi. Major W. H. Emory, United States commissioner on the Mexican boundary survey, observed on the 25th of October, 1846, this noble plant, which Dr. Engelmann published in 1848 in Emory's report, 156, figure 5, giving the following characters:—"18 inches in diameter; height equal to the diameter; shape ventricose, contracted toward the vertex, therefore somewhat urceolate; with 21 straight, sharp ribs; spines apparently 8, straight, brown, color of plant bright green; vertex whitish (tomentose?); fruit 1 or 1½ inches long, oval, yellowish or reddish. Seed obovate, obliquely truncated at base, full 1 line long, black, opaque, slightly roughened; embryo curved or hooked,

cotyledons accumbent, partly buried in the large farinaceous albumen." No specimen appears to have been preserved by Maj. Emory, who probably found the plant on the Gila river (as stated by Engelmann in the boundary report), where it has since been found by Orcutt. Toumey and others have so far failed to find it in New Mexico, as now bounded. It has not been observed west of the Colorado river by Coville, Parish or others so far as known, the usual reference, as quoted from Engelmann and Bigelow, "Collected west of the Colorado, in the valley of the Mojave, mixed with *E. polycephalus*," being undoubtedly erroneous, as it is followed on the same page by the statement that they "collected only one young specimen, probably on the lower Colorado." (190)

ECHINOCACTUS FALCONERI Orcutt.

Plant cylindrical in age, 9-12 inches in diameter, usually under 2 feet high, light apple green in color, with a withered appearance (perhaps not normal); ribs tuberculate, acute, spirally inclined (hence called caracola, "snail", or biznaga caracola), usually 13, to rarely 17, intervals narrow and deep; radial spines 10 or less, grayish white, flattened, flexuous, 1-2½ inches long and laterally disposed; central spines 7, stout, strongly annulated, reddish brown, the 3 upper and 3 lower of about equal length, divergent, 1-3 inches long, terete or slightly angled, straight; the longest central erect, straight, flattened or channelled above, ¼ inch broad or less, varying from 1 to 6 inches in length sometimes on the same plant, uniformly about ½ inch at the tip turned downward at right angles with the main portion of the spine, forming a short hook. Named in honor of William Falconer. Type, Orcutt, No. 2603:—Batamotál, Sonora, Mexico.

Flower and fruit will be described later, but resemble those of *E. wislizeni*, with which the plant has perhaps hitherto been confounded.

E. horizonthalonius Lemaire, Cact. Gen. Nov. et Sp. 19. Mexico. Glaucous, depressed-globose or at length ovate or cylindrical, 2-8 inches high, 3-6 in diameter; ribs 8-10, often spiral, obtuse, the tubercles in old specimens divided by more or less shallow 1894, from near San Quintin bay, as a form of *E. peninsulæ*."—Orcutt Rev 81; grooves: areolae 6-10 lines apart, covered with long wool when young; spines mostly 6-8, about an inch long, slender to stout and broad; flower 2½ inches long and broad, open only in

bright sunshine, rose-purple; ovary 3 lines long; tips of sepals dark purple, protruding from the dense white wool which envelopes the entire flower: fruit red, juicy, soon drying and breaking off transversely, leaving the base with most of the seeds hidden in the wool: seeds shrivelled in appearance, 1.2-1.5 lines long, black. (10-20) **ECHINOCACTUS JOHNSONII** Engelm.

Johnson's hedghog cactus was named for J. E. Johnson, an early Mormon naturalist, who discovered it about S.

George in southern Utah. It is a rare and handsome plant, 4 to 7 inches high, oval, 3 to 5 inches in diameter, densely covered with stout reddish-gray spines—turning deep red when wet. The flower is about 2¼ inches broad, of a rose purple normally, but some plants which opened their flowers while packed in a box away from the light leave light yellowish-green petals marked with deep maroon at base. Anthers pale primrose yellow; filaments ½ inch long, the inner ones white, outer ones reddish. Growing in out-of-the-way desert places in Nevada, Arizona, and California, it costs much trouble to secure this beautiful species.

ECHINOCACTUS LECONTEI Engelm.

Plant 3-4 feet high, about one-third that in diameter, clavate; flower 2 inches long, lemon yellow. Type locality on the lower parts of the Gila and Colorado rivers, and in Sonora. The Mohave and Colorado Desert plants, usually referred to this species, seem to me distinct. This now seems to me distinct from either *E. wislizeni* or *E. cylindraceus*.

E. limitus Engelmann, MSS. Coulter, CNH 3:374 (1 Ap 1896):—"Globose and large, 3 dm. or more in diameter; ribs 21, oblique, thick and broad (compressed above), slightly interrupted; radial spines 12-16, about 2.5 cm. long, upper and lower most prominent, laterals occasionally somewhat twisted; central spines 4, ashy-red, finely annulate, slightly recurved, upper and lower ones flat and broad, 4-4.5 cm. long, lateral ones angular and shorter; flowers campanulate, purplish-brown or dusky, 3.5-4 cm. long and broad; fruit green." Not essentially distinct from *E. viridescens*. Type locality:—Boundary line between California and Baja California, with *Agave Shawii* and *Cereus Emoryi*. (5)

ECHINOCACTUS ORCUTTII Engelm.

"Heads cylindrical, 10-18 inches in diameter in the middle, growing single or ameter and 2-3½ feet high, sometimes often cespitose, more rarely proliferous at base, with 13 when young, to usually 20 or 22 obtuse tuberculate ribs and a woolly, spineless, depressed top; spines stout, reddish, straight or recurved, all annulated, usually 9 radiating and 4 stouter central ones; flowers deep dull crimson with greenish or lighter colored margins to the petals, 2 inches long, otherwise as in *E. viridescens*; stigmata green, 16-20; fruit pulpy, crimson, scaly, with numerous small seeds."—Or W 2 :46 (Je 1886).

Type locality: Palm valley, Lower California.

ECHINOCACTUS PENINSULAE Eng.

Globose to cylindrical, rarely over 18 inches in diameter, rarely attaining a height of 8 feet; the 12-21 compressed tuberculated ribs set with clusters of dull red spines; centrals 7, stout, the stoutest not rarely 4-6 inches long and ¼ inch broad, hooked.

ECHINOCACTUS POLYANCISTRUS EB

The Hermit cactus, so-called because it is rare to find more than one in a place, is a strikingly beautiful cactus which I have seen only on the Mohave desert in its wild state. The largest plant I have seen is 18 inches high and 4 inches in diameter; each tubercle bears three to seven hooked, round, brownish-pink spines, with which are interspersed fewer ivory white spines, not hooked, very pleasing in contrast. Flower over 2 inches long, of equal width, petals bright magenta, green at base, filaments and stigmata green, anthers white. They were once catalogued at \$15 apiece, and are still rare in collections, unfortunately seldom long surviving transplanting from their native sands. Too much moisture soon proves fatal.

E. polycephalus Engelmann and Bigelow, Pacific railroad report, 4:31, t. 3, fig. 4-6. Heads globose, at last cylindrical, a foot to 2 feet high, often 20-30 from a single base: ribs 13-21, acute: circular areolae bearing 8-12 stout compressed annulated curved reddish-gray spines, either all radial, or 6 or 8 outer ones surrounding 4 stouter central ones: flowers enveloped in a mass of dense wool, about 100 rigid dark pointed sepals upon the ovary are hidden in the wool, those of the tube about as many and similar; petals about 30, lance-linear, yellow, just emerging from the wool; stigmata 8-11, linear: the dry berry full of

angular seeds, seeds 2 lines long, wrinkled and minutely tuberculate. Colorado and Mohave deserts. Arizona.

E. Simpsoni Engelmann, Trans. Acad. Sci. St. Louis 2:197 (1863). Simple, globose or depressed, with ovate tubercles like a *Mammillaria*, bearing about 20 outer ash-colored spines and 5-10 stouter darker inner ones, all straight and rigid. Flowers from the top of the just developing tubercles, small, 9-12 lines broad, yellowish green to purplish; scales on the ovary very few; berry small, dry, with few black tuberculated seeds. Flowers in April and May. (5)

Variety *MINOR* Engelmann.

Button or Snake Cactus; spines arranged in beautiful star-shaped clusters; flowers pale rose.

E. viridescens. Thomas Nuttall crossed the American continent in an expedition under Capt. Wyeth, in 1834, to the Columbia river. Thence he went to the Sandwich Islands, and returned to California, where he collected during a part of the year 1835, mostly near the coast from San Francisco to San Diego. His collections were very rich, and contained the types of many new species. On arid hills near San Diego, he observed what he supposed to be a species of *Melocactus*. No specimen appears to have been preserved in his collections but Torrey and Gray, in 1840, published in their *Flora of North America*, 1:554, the following description from Nuttall's manuscript, rightly considering the plant they had never seen to be an *Echinocactus* rather than a *Melocactus*:—"Large and nearly globose, with 20 or more angles; spadix none; flowers (rather large) yellowish-green, from the upper cluster of spines; spines radiating, unequal; 3 of them usually larger, broad, acuminate, transversely striate; fruit green and smooth. Sometimes a foot high and 9-10 inches in diameter: seldom if ever laterally clustered. Segments of the calyx ciliate, nearly the length of the linear-lanceolate petals. Berry about the size of a gooseberry."

ECHINOCACTUS WHIPPLEI E. & B.

Whipple's hedgehog cactus is only 2 to 5 inches high, ovate-globose, char-

acterized by seven compressed white radial spines and four broad hooked central spines. Flower $1\frac{1}{2}$ inch long, petals and filaments pale straw color, the style and seven stigmata green.

ECHINOCACTUS WILLIAMSII Lem.

The Mescal Button, or Turnip cactus, as it is sometimes called (which forms the type of Coulter's genus *Lophophora*) is a small spineless plant with pretty rose-colored flowers. The plant rarely exceeds 3 inches in diameter, little appearing above the surface of the ground, but when eaten it produces peculiar intoxicating effects similar to those from the use of opium, and the plant enters into certain religious rites of the Indians of the Sierra Madre mountains in Mexico. A powerful drug is prepared from the plant by chemists.

ECHINOPSIS Zuccarini, in *Abh. Akad. Muench* 2:676 (1837):—Flowers produced below summit; calyx-tube elongated, downy, lobes numerous; stamens in 2 series, the exterior adnate to the calyx, the inner free; fruit scaly; stem depressed, ribbed, globose or cylindrical. Treated by conservative botanists as a section of *Cereus*. Cotyledons small. Ovary covered with setae. Hedgehog Cactus. Mostly very spiny, bearing a profusion of beautiful, large, delicately colored flowers. Easy of cultivation, and very popular.

ECHINOPSIS ALBISPINOSA KS.

KS, *MfK* 1903:154, f.

E. amoena Dietrich, *AGZ* 1844:187:—*E. obovata*, pallide viridis, vertice rotundato; costis 11-12 obtusis, interrupti tuberculatis; aculeis e lana parca decidua 7, brevibus rectis, albidis, patentibus, imo longiore."

E. amoenissima Wender. *Analect. Krit. Bemerk.* (1852) n. 6. Habitat?

E. apiculata Linke, in *C. Koch & Fint. Wochenschr.* 1:85 (1858). Bolivia.

E. aurata Salm-Dyck, *HD ed.* 2, 182:—"E. depressos, viridis, sub 28 angulatus, vertice concavo dense aculeatus; costis verticalibus, compressis, circa areolas inflatis; areolis remotis (fere poll. 1) oblongis, tomento denso fulvido-algido, tandem cinereo munitis; aculeis rigidis, vix curvatis, luteis, exterioribus circa 12 sub compressis, centralibus 1-2 pleurumque subulatis,

omnibus ultrapolli-caribus.—*Diametro* 12-15 pollicari, *altitudine* 4-5. (*Pfr. Abbild.* 2. p. 14 sub *Echinocacto*.)" In *Index Kewensis* this is doubtfully referred to *Cereus auratus*—a species published by Lemaire some years later, a description of which we have not seen.

E. Bridgesii Salm-Dyck, *HD ed.* 2, 181 (1850):—"E. caule subellipsoideo inferne prolifero nitide viridi sinubus latis, costis 12-14 rotundatis inter pulvillos convexis, pulvillis immersis confertis parce griseo-tomentosis, aculeis subaequalibus subelongatis rigidissimis, exterioribus 9-11 interioribus 4, omnibus primo brunneis dein cinereis. Caulis hucusque poll. 5-6 altus et diametro 3-4 pollicari, utrinque paulum attenuatus, inferne proliferus. Costae crassae, obtusae, obrepandae. Aculei lin. 5-6 longi, rigidi, exteriores 9 interdum cum binis summis gracilioribus, radianter patentibus, interiores 4 decussati, saepe uno alterove deficiente. Cura Dom. Bridges, qui flores vidit, e Bolivia advecta. In hortis nondum floruit."

E. campylacantha Salm-Dyck, *HD ed.* 2, 182 (1850):—"Caulis adultus subellipsoideus, et 16-17 costatus evadit. Aculei exteriores, in specie ipsa (pleurumque 7) lin. 12 longi, centralisque sesquipollicaris, rigidissimi sunt; sed in var. B. duplo longiores subflexiles, magisque sursam adscendentes." On page 39, Salm-Dyck cites *Echinocactus leucanthus* Gill, *Bot. Reg. t.* 13 (1840), and *Cereus leucanthus* Pfeiffer, *Enum.* 71, as synonyms, and called the variety by the name stylodes. See Pfeiffer & Otto, *Abbild. Cact.* 1 sub t. 4. A synonym of *Cereus leucanthus* fide *Index Kewensis*.

E. cristata Salm-Dyck, *HD ed.* 2, 33, 178 (1850). Based on *Echinocactus obrepandus*, published by the same author in *AGZ* 1845, 386, as from Bolivia, of which the following is the original description:—"Caule depressogloboso nitido viridi 17 costato, costis compressis inter pulvillos valde cristatim obrepandis, pulvillis immersis subconfertis griseo-tomentosis; aculeis rigidis exterioribus 10 recurvato-patientibus, summo cum centrali solitario longioribus erecto-recurvulis."

E. Decalsniana Walp. Rep. 2:324, is *Echinocactus Decalsnei*.

E. Eyriesii Pfeiffer & Otto, Abbild. Cact. 1 sub t. 4. Stem very regularly globose, 12-18 small angular ribs: spines small, dark, 11 outer, 4 centrals, set in little tufts of white hairs: flowers 6-8 inches long, like a curved funnel, 4-5 inches across, white, with a strong and delicious fragrance. Pfeiffer credits the species to Buenos Ayres.

E. Forbesii Hort. angl. ex A. Dietrich, AGZ 1849, 192:—"Ech. globosa, depressa, viridis, subduodecimcostata, costis crassis interruptis, sinubus acutis, areolis remotis immersis albolanatis, aculeis 10-12, inaequalibus subdistichis subcurvatis, interdum 1-2 centralibus, petalis laete roseis. Habitat?"

ECHINOPSIS FORMOSA Jac.

E. formas Jacobi, ex Salm-Dyck, HD ed. 2, 39. Based on *Echinocactus formosus* H. Angl. ex Pfeiffer, Enum. 50.—"Meloc. Gilliesii Hort. Pa: Mendoza. E. subglobosus vel oblongus pallide virens; costis 16 verticalibus obtusis repandis; areolis subremotis ovalibus sublanatis griseis; aculeis acicularibus rigidis, centralibus 2-4 longis brunneis, exterioribus 8-10, superioribus fuscis, inferioribus albis. Spec. 5 poll. diam., $4\frac{1}{2}$ poll. altum. Areolae 4-5 lin. distantes. Aculei centrales 1-1 $\frac{1}{2}$ poll. longi." Chili. *Cereus Gilliesii* Weber, Dict. 471.

E. formosissima Labouret, in Rev. Hortic. ser. 4, 4:26 (1855). Mexico: Chihuahua.

E. gibbosa Pfeiffer ex Foerster, Handb. ed. 1, 291, is *Echinocactus gibbosus*.

E. grandiflora A. Linke, in C. Koch, AGZ 1857, 239. Brazil.

E. Haageanus Linke, in C. Koch & Fint. Wochenschr. 1:86 (1858). Is *Echinocactus Haageanus*.

E. Huottii Labouret, Mon. Cact. 301:—"Echinocactus Huottii Cels, Portef. des horto, 1847, 216. Chili. Tige subcylindrique, drageonnant a ea base, vert tendre; 9-10 cotes verticales renflees vers les areoles, celles-ci saillantes; sillons larges et profonds; areoles grandes, plus larges que longues, munies de tomentum gris cendre, long d'abord, ensuite court; aiguillons bruns, d'abord carnes, ensuite d'ungris

cendre, 14 dont 10 rayonnants regulierement, divergents, inegaux, effiles, les superieurs les moins longs, 4 interieurs decuses, les 3 inferieurs subules, presque agaux, dont 1 plus fort, le double des autres en longueur; tous a pointe noire."

E. Jamessianus Hort. ex Salm-Dyck, **E. Knottii** Schlumb. in Rev. Hortic. HD ed. 2, 38, as *E. Decalsniana* ser. 4, 3:348 (1854), error for *E. Huottii*?

E. leucantha Walp Rep. 2:324. Stem globose or ellipsoid, ashy-green: ribs 12-14, vertical, compressed; areolae oblong, with white wool: spines subulate, very large, 2 cm. long, rigid, bent, brown at base, then yellowish, black at the tips, 8 radials, 1 central: flowers large, white or reddish. Mendoza, Chili. Argentina. Patagonia.

E. Maximiliana Heyder, ex A. Dietrich, AGZ 1846, 250:—"Ech. obovata, glaucescens, septemdecimcostata, vertice concavo, costis crassis repandis, sinubus acutis, areolis remotis immersis albo-lanatis aculeis subduodenis albidis et brunneis arcuatis vel flexuosis, lateralibus 8-10 biserialibus, intermediis binis, solitariis vel nullis; petalis fulvis."

E. melanacantha A. Dietrich, AGZ 1846, 306. Is *E. Zuccariniana nigripina* Lemaire.

E. Misleyi Labouret, Mon. Cact. 291:—"Echinocactus Misleyi Cels, Portef. des horto, 1847, p. 216. Chili. Tige spherique, a sommet legerement ombilique, vert olivatre; cotes verticales aigues, crenelees; sin sillons aigus; areoles plus larges que longues, immergees, inserees obliquement entre deux saillies convexes de la cote, munies de tomentum gris, court; 9-13 aiguillons assez longs, tres-recourbes, brun, dont 8 rayonnants symetriquelement, et inseres des deux cotes de l'areolae et tout a fait recourbes sur la plante, ceur haut sont les plus longs, 1 inferieur plus court, enfin 1-2 interieurs noduleux a la base, tres-recourbes vers le sommet de la plante." Cited as *E. cristata*.

E. Mulleri Hort. A hybrid probably of *E. multiplex*, of rapid growth, one of the most popular in California gardens. The beautiful flower meas-

ures fully 5 inches across, and is of a most delicate shade of rose purple; anthers cream-white, filaments, style and stigmata white: inner petals about 20, in 2 series, sepals of equal number; tube of flower 6 inches long, with scales at the base of tufts of grayish hair; scales on ovary spine-like. (5-20)

E. multiplex Pfeiffer & Otto, Abbild. Cact. 1, t. 4. Southern Brazil. Stem obclavate, proliferous at base, with 13 ribs: spines rigid, 4 centrals, 9-10 short yellowish radials: flower 4 inches across, petals rose; fruit green, with small woolly scales; seeds small, black, with 2 cotyledons

E. nigricans Linke, in C. Koch, AGZ 1857, 239. Chili.

E. nigrispina Walp. Rep. 2:324. Habitat?

E. nodosa Linke, in C. Koch & Flnkt. Wochenschr. 1:85 (1858). Is *Echinocactus nodosus*.

E. obrepanda Karl Schumann, Mon. 226. Based on *Echinocactus obrepandus* (*Echinopsis cristata*).

E. oxygona Zuccarini, Pfeiffer & Otto, Abbild. Cact. 1, sub. t. 4. Plant resembles *E. Eyriesi*, but spines are brown, the pulvini not so white: flowers extremely beautiful, the tube 8 inches long, 4 in diameter, less contracted than in *E. Eyriesi*, and the petals not spreading so horizontally: the outer part curiously marked with green and red, the petals white, stained with red on the margins, giving a pretty contrast.

Brazil, South America.

E. pectinata Fennel, AGZ 1843, 282. Is *Cereus pectinatus*.

E. Pentlandi Salm-Dyck, ex A. Dietrich, AGZ 1846, 250:—"Ech. globosa, glauca, subduodecimcostata, vertice concavo, costis crassis repandis, sinubus acutis, areolis remotis immersis albo-lanatis, aculeis sex subvalidis aequalibus paululum arcuatis stellatim patentibus rufofuscis; petalis rufescenti-roseis. *Echinocactus pentlandi* Hook. Bot. Mag. t. 4124."

Peru, South America.

E. picta Walp. Rep. 2:324. Habitat?

E. pulchella Zuccarini, ex Foerster, Handb. ed. 1, 363. Is *Cereus pulchellus*.

E. Reichenbachiana Pfeiffer, ex Foerster, Handb. ed. 1, 365. Is *Cereus caespitosus*.

E. rhodacantha Salm-Dyck, HD ed. 2, 182 (1850):—"Caulis adultus, nunc diametro semipedali, costis 25 instructis est. Aculei exteriores 8-10 (infimo longiore) lin. 12-12 longi, centralisque, interdum deficiens, fere sesquipollicaris. In horto Dyckensi huc usque non floruit; sed in aliis hortis *Echinopsidium flores protulit.*" Brazil.

E. Salmiana Weber, Dict. 472. Based on *Echinocactus Salmianus* Cels, Portaf. des hort. 1847, 180 (*Echinopsis Bridgesii* Salm-Dyck).

Variety *BRIDGESII* KS.

E. salpigophora Lemaire, ex Salm-Dyck, HD ed. 2, 181 (1850):—"Planta in horto culta nimis novella est, ut describi possit. Magnam praebet similitudinem cum *E. valida*, et forte est eadem species."

E. Scheerii Salm-Dyck, HD ed. 2, 179 (1850):—"E. caule ellipsoideo carnoso undique prolifero laete viridi 13-19 costato, costis compressis ad pulvillos oblique interruptis, pulvillis subconfer-tis minutis, junioribus albo-tomentosis, aculeis aciculatis inaequalibus, exterioribus 6 validis cum 4-5 accessoriis gracilioribus radianter patentibus, summo atque centrali solitario longioribus erectis atropurpureis. Caulis poll. 5 altus, et diametro 2 pollicari, utrinque attenuatus, magis carnosus quam in congeneribus, et maxime prolifer. Costae, e tuberculis cristatim elongatis, subconfluentibus, sed ad pulvillos oblique distinctis constantes, sinubusque parum incisus divisae. Aculei aciculati vix recurvuli, juniores atropurpurei pauciores ac graciles, seniores grisei et 7-12 lineas longi. Hucusque non floruit haec praesingularis species, quam Dom. Scheer benevole mihi communicavit. Patria mihi ignota."

E. scopa Carr. in Rev. Hort. 1875, 374, is *Echinocactus scopa*

EPIPHYLLUM Haworth, Syn. Pl. Succ. 197 (1812) in part; Pfeiffer, Enum. 127 (1837). Stems flattened, jointed, joints short; petals irregular, almost bilabiate.

E. Ackermannii Haworth, in Phil. Mag.

(August, 1829) 109, is a synonym of *Phyllocactus Ackermannii*.

E. Aitoni Hort. ex Steud. Nom. ed. 2, 1:561, is a synonym of *Cereus splendens*.

E. alatum Haworth, Suppl. Pl. Succ. 84; et Phil. Mag. (August 1829) 109, is *Rhipsalis* (*R. pachyptera* and *R. Swartziana*).

E. Altensteinii Pfeiffer, Enum. 128.—“*Cer. truncatus Altensteinii* H. Berol.

—*Epiphyllum truncatum multiflorum* Hort. Pa: Brasilia. *E. suberectum articulato-ramosum*; articulis oblongis subcarnosis laete viridibus, longe dentatis, apice profunde sinuato. Articuli 2 poll. et ultra longi, 8-10 lin. lati, dentibus usque 5 lin. longis. Differt ab *E. truncato* (praeter florem) articulis longioribus, crassioribus et magis dentatis.”

E. alternatum Lemaire, AGZ 1840, 198.

E. angulifer G. Don. ex Loud, Encyc. Pl. Suppl. 2:1380, is a synonym of *Phyllocactus anguliger*.

E. biformis G. Don. ex Loud. Encyc. Pl. Suppl. 2:1378, is *Phyllocactus biformis*.

E. Bridgesii Lemaire, Illustr., Hort. viii. Misc. 5 (1861). Is *E. truncatum*.

E. caulorhizum G. Don, ex Loud, Encyc. Pl. Suppl. 2:1380. Is *Phyllocactus caulorhizus*.

E. ciliare Hort. ex Pfeiffer, Enum. 130, as a synonym of *Rhipsalis ramulosa* Pfeiffer

E. ciliatum Hort. ex Pfeiffer, Enum. 130, as *Rhipsalis ramulosa*.

E. crenulatum Hort. ex Pfeiffer, Enum. 130, as *Rhipsalis rhombea*.

E. crispatum Haworth, in Phil. Mag. (Feb. 1820) 109, is *Rhipsalis crispata*, fide Pfr. AGZ 1836, 186.

EPIPHYLLUM DELICATUM NEBR.

NEBR, GC sr 3, 32:419. Brazil.

E. elegans Cels, ex Foerster, Handb. ed. 1:446, is perhaps *E. truncatum*.

E. exacifolium. Is *Rhipsalis crispata* Pfeiffer, fide Pfeiffer, AGZ 1836:186.

E. Gaertneri Hort. ex Pfeiffer, AGZ 1836:186. Is a variety of *E. Russellianum*. Hybrid.

E. Guedneyri Houlet, in Rev. Hort. 1875:230. Habitat?

E. Hitchini Hort. ex Steud. Nom. ed 2, 1:561, is *Cereus splendidus*.

E. Hookeri Haworth, in Phil. Mag. (August 1829) 108, is *Cereus Hookeri*.

(*Phyllocactus Hookeri*).

E. hybridum Hort. ex Pfeiffer, Enum 121, as *Cereus speciosissimus*, variety *lateritius* (Bot. Reg. t. 1596).

E. Jenkinsonii G. C. Don. Gen. Syst. 3:170, is *Phyllocactus phyllanthoides*.

E. latifrons Zucc. ex Pfeiffer, Enum. 125, as *Cereus latifrons* (*Phyllocactus latifrons*).

E. Mackoyanum. A hybrid of *E. truncatum*.

E. oxypetalum Haworth, in Phil. Mag. (Aug. 129) 109, is *Phyllocactus latifrons*.

E. phyllantoides Sweet, Hort. Brit. ed. 1, 172, is *Phyllocactus phyllanthoides*.

E. Phyllanthus Haworth, Syn. Pl. Succ. 197, is *Phyllocactus Phyllanthus*.

E. platycarpum Zuccarini, ex Pfeiffer, Enum 131, as *Rhipsalis platycarpa*.

E. ramulosum Hort. ex Pfeiffer, Enum. 130, as *Rhipsalis ramulosa*.

E. rhombeum Hort. ex Pfeiffer, Enum. 130, as *Rhipsalis rhombea*.

E. Ruckeri Paxton, Mag. Bot. 12:46 (1846), is *E. truncatum*.

E. Ruckerianum Hort. ex Lemaire, Illustr. Hort. viii. Misc. 5 (1861), is *E. truncatum*.

E. Russellianum Hooker, Bot. Mag. t. 3717. Brazil.

E. Smithianum Marnock, Flor. Mag. viii. t.13, is *E. truncatum* fide Index Kew. (*Phyllocactus Smithii* fide Labouret).

E. speciosum Haworth, Suppl. Pl. Succ. 84, is *Phyllocactus phyllanthoides*.

E. splendens Hort. ex Ann. Fl. et Pom. 343 (1839) (ex Sched. DC.), is *E. splendidum*.

E. splendidum Paxton's Magazine of Botany, 1:49 (1834):—"Branches ensiform, flat, with spreading teeth, and smooth. Flowers in the indentations of the leaf-like branches at the sides, chiefly near the extremity, solitary, very large, from 6-10 inches diameter, rich carmine color. Petals oblong, each terminating in a fine point. Stamens light rose color, slender, two-thirds the length of petals, anthers white. Style equals in length to the stamens, terminating in 6 stigmas." Mexico. *Cereus splendidus* Paxton, ex Steud. Nom. ed. 2, 1:336. Probably

this is *Phyllocactus Ackermanni*.

E. truncatum Haworth, Suppl. Pl. Succ. 85. Brazil. Inch. Crab, or Lobster Cactus, popular as a house plant. The original is said to have had dark crimson flowers with a white throat. By some botanists this is considered as the only species in the genus, the others being mere forms; many beautiful varieties have been produced by hybridizing this with *E. Russellianum*, the most distinct of the other species. *Cactus truncatus* Link, Enum. 24, and *Cereus truncatus* DC., Prodr. 3:470, are among the synonyms. Portraits have appeared in Bot. Reg. t. 696; Bot. Mag. t. 2526; Paxton's Mag. Bot. 8:79, and elsewhere. (5)

E. Vandesii G. Don, Gen Syst. 3:170, hybrid.

E. violaceum Cels, ex Foerster, Handb. ed. 1, 446, is probably *E. truncatum*, variety.

ESCHSCHOLTZIA

Greene, Cal ac b 1:66-68. A 1:258d.

E. ALIENA P 5:217, 260d.

E. ALGICORNIS P 5:219, 273d

E. AMBIGUA Greene, Fl Fr 286d. P 5:216, 251.

E. ARIZONICA P 5:217, 261d.

E. ARVENSIS P 5:216, 253d.

Variety **DILATATA** P 5:253d.

E. ASPREBLA P 5: 219, 272d.

E. AUSTINAE Greene, Cal ac b 1:69. Butte Co, Cal.

ESCHSCHOLTZIA AUSTRALIS.

P 5:216, 249d. A 1:259 fdr.

E. BAKERI P 5:220, 284d.

E. BENEDICTA P 5:215, 228d.

E. BERNARDINA P 5:217, 255d.

E. BICOENUTA P 5:216, 249d.

E. BIOLETTII P 5:215, 232d.

E. BITERNATA P 5:219, 271d.

E. CAESPITOSA Bth, Hort sc tr sr 2, 1:408 Da 2. P 5:220, 284.

Greene, Cal ac b 1:70 as *tenuifolia*. B 1:23 as *Californica* var.

ESCHSCHOLTZIA CALIFORNICA

Chem, in nees Horae Physicae Berol 73 t 15.

B 1:22. Ab 161. Ha 81. "Copa de Oro." Par 118t. A 1:258d. Br 1:206 Rosa (cites *glauca* as synonym).

The list of varieties is here omitted, as it would include nearly all the other sp named in the genus—some of which are unworthy even of varietal rank, and the labor of sifting the chaff from the wheat would leave little wheat.

E. CARUIFOLIA P 5:219, 281d.

ESCHSCHOLTZIA CLEVELANDI.

E. COGNATA P 5:216, 252d.

E. COLUMBIANA P 5:215, 231d.

E. COMPACTA Steud, Nom ed. 2, 1:598. Greene, Fl Fr 285 (= in part *arvensis* fide P 5:253).

E. COVILLEI P 5:219, 275.

E. CRASSULA P 5:218, 266d.

E. CRASSOPHYLLA P 5:218, 268d.

E. CROCEA Bth. B 1:22 as *Californica*. P 5:216, 241.

Variety **LONGISSIMA** P 5:241.

Variety **APIIFOLIA** P 5:241.

E. CRUCIATA P 5:219, 279d.

E. CUCULLATA P 5:214, 225d.

E. CYATHIFERA P 5:217, 263d.

E. DEBILIS P 5:215, 227d.

E. DIVERSILOBA P 5:217, 256d.

E. DOLICHOCARPA Eastwood, Torr cl b 30:487. P 5:220, 288.

E. DOUGLASII Bth 296. T, bot Mex bound 31. B 1:23, as *Californica* var. P 5:215, 230.

E. DUMETORUM P 5:220, 283d.

E. EASTWOODIAE P 5:215, 227d.

E. ELEGANS P 5:218, 268.

Variety **RAMOSA** Greene. A 1:3 as sp.

E. ELMERI P 5:220, 286d.

E. EXILIS P 5:217, 265d.

E. EXIMIA P 5:219, 273d.

E. FOENICULACEA P 5:214, 224d.

E. FOENICSA P 5:220, 288d.

E. GLAUCA Greene, Cal ac b 2:389

Cruz. P 1:45, 5:215. A 1:107 fdr.

E. GLYPTOSPERMA Greene, Cal. ac b

1:70. P 5:220, 292. A 1:108 fdr.

E. HELLEBRIANA P 5:215, 229d.

E. HUMILIS P 5:217, 265d.

E. HYPERICOIDES Bth. A b 161. B 1:23 as Cal var. P 5:219, 274. A 1:108d.

E. INCISA P 5:220, 287d.

E. INFLATA P 5:217, 264d.

E. ICSTIGMA P 5:216, 254.

E. JONESII P 5:217, 261d.

E. JUNCSEA P 5:215, 228d.

E. LACERA P 5:216, 250d.

E. LEMMONI Greene, W 3:157. P 5:220, 289. A 1:108 fdr.

Variety **LAXA** P 5:289.

Variety **CUSPIDATA** P 5:289.

ESCHSCHOLTZIA LEPTANDRA Greene P 1:170. A 1:72 fdr.

E. LEPTOMITRA P 5:218, 265d.

E. LEUCOSTICTA P 5:215, 229d.

E. LOEBII P 5:220, 290d.

E. LUDENS P 5:219, 272d.

E. MARCIDA P 5:215, 233d.

Variety **MONTICOLA** P 5:233d.

E. MARITIMA P 1:60, 85 Mig. 5:214. A 1:108 fdr.

E. MENZIESIANA P 5:214, 223d.

Variety **RECEDENS** P 5:223d.

Variety **ANEMOPHILA** P 5:223d.

E. MEXICANA Greene, Cal ac b 1:69. P 5:217, 262. A 1:109 fdr.

E. MICRANTHA P 5:277, 219.

E. MICROLOBA P 5:216, 250d.

E. MINUSCULA P 5:218, 270d.

ESCHSCHOLTZIA MINUTIFLORA.

Wat 11:122. B 1:23. Z 1:281. A 1:258d. Sereno Watson, Am ac pr 11:122.

E. MODESTA P 1:169d. 5:219, 276. A 1:109 fdr.

ESCHSCHOLTZIA ORCUTTIANA.

P 5:216, 254d. A 1:259 fdr.

E. OREGANA P 5:219, 282d.

E. PALMERI Rose, CNH 1:23. P 5:293 as *Petromecon* P.

ESCHSCHOLTZIA PARISHII Greene.

P 5:218, 269. A 1:73 fdr.

E. PAEVULA Ckl bot gaz 26:279. P 5:217, 263.

E. PAUPERCULA P 5:217, 262d.

- ESCHSCHOLTZIA PENINSULARIS** Gn. P 5:217, 260. A b 161. A 1:73 fdr.
E. PETROPHILA P 5:220, 283d.
E. PHYODES P 5:217, 259d.
E. PICTA P 5:217, 255d.
E. PTARMICOIDES P 5:218, 270d.
E. PULCHELLA P 5:220, 291d.
E. PUSILLA P 5:219, 281d.
E. QUADRANGULARIS P 5:218, 264d.
ESCHSCHOLTZIA RAMOSA Greene. Torr cl b 13:217. P 5:218, 267. A 1:3 fdr. P 1:263 San Benito Isl. Greene, Cal ac b 2:389 Cruz.
E. elegans var. *ramosa* Greene, Cal ac b 1:182.
E. RHOMBIPETALA Greene, Cal ac b 1:71. San Joaquin valley. P 5:220, 289.
E. ROBUSTA P 5:218, 266d.
E. ROSTELLATA P 5:219, 282 d.
E. RUTAEFOLIA P 5:218, 271d.
E. SEASTENSIS P 5:215, 234d.
E. STREAMINEA P 5:217, 257d.
E. TENUIFOLIA Bth. B 1:23 as Cal var. *caespitosa* Greene, Cal ac b 1:70 cult.
E. TENUISECTA P 1:167d. 5:216, 252. P 1:169. A 1:73 fdr.
E. TENUISSIMA P 5:220, 285d.
E. THERMOPHILA P 5:217, 256d.
E. TORTUOSA P 5:219, 278d.
E. TRICHOPEHYLLA P 5:218, 268d.
E. UNGUICULATA P 5:220, 292d.
E. VACCARUM P 5:219, 282d.
E. VERNALIS P 5:217, 258d.
E. YAINACENSIS P 5:215, 234d.
ESPELETTIA Mutis ex Humb & Bonpl P 1: Aequin 2:10 t 70-72 (1809).
ESPELETTIA Nutt, Phil ac J 7:37 t 4 (1834). = *Balsamorhiza* fide 1 k.
E. HELIANTHOIDES Nutt, lc, 39. B 1:348 as B: sagittata.
E. SAGITTATA Nutt, lc, 39. B 1:348 as B: S.
EUCEPHALUS Nutt, Am phil, sc tr, ns, 7:298 (1841). = *Aster* fide 1K.
E. COVILLEI P 3:162.
E. ELEGANS P 3:54.
E. ENGELMANNI P 3:54.
E. ERICCIDES Nutt, lc, 299. P 3:148 as *Leucelene* e.
E. FORMOSUS P 4:156.
E. GLABRATUS P 3:56.
E. GLAUCESENS P 3:56.
E. GLAUCUS Nutt, lc, 299. P 3:56 4:157.
E. LEDOPHYLLUS P 3:57.
E. MACOUNII P 4:70.
E. NEMORALIS P 3:57.
E. PAUCICAPITATUS P 3:56.
E. SERRULATUS P 3:55.
E. TOMENTELLUS P 3:55.
EUCHERIDIUM F & M, Ind sem Hort Petrop 2:36 (1836).
E. BREWERI G 6:532. P 1:141 as *Clarkia* B. B 1:232, 2:448.
E. CONCINNUM F & M, lc, 2:11. B 1:232. Lindl, bot reg 23 t 1962. P 1:140 as *Clarkia concinna*. Z 2:162.
E. GRANDIFLORUM F & M, lc, 7:48. B 1:232 as *concinnum*.
EUCHROMA Nutt Gen 2:54 (1818). = *Castilleja* fide 1K.
E. PALLESCENS Nutt ex G, Syn Fl, 2 (1):299. B 1:576 as *Orthocarpus* p.
EUCYCLA Nutt, Phil ac J, ns, 1:166 (1847). = *Eriogonum* fide 1K.
E. OVALIFOLIA Nutt, lc. B 2:26 as *E. ovalifolium*.
E. PURPUREA Nutt, lc. B 2:26 as *E. ovalifolium*.
EULOBUS Nutt, T & G Fl 1:514. A 1:334d.
E. CALIFORNICUS Nutt, T & G Fl 1:515. P 1:302 as *Oenothera leptocarpa*; Cal ac b 2:398 Cruz. Ab 269. B 1:221.
EULOPHUS Nutt, ex D C Coll Mem 5:69 (1829).
EUMANUS Bth, DC Prodr 10:376 (1846). = *Mimulus* fide 1K.
EUMANUS ANGUSTIFOLIUS Greene. "Hirsute-pubescent, the hairs strongly glandular: 2-4' hi, with few ascending brs: lvs narrowly linear (the lowest not seen): ex prismatic, gradually widening to the orifice, altogether hyaline except the unequal triangular-lanceolate teeth: cor $\frac{1}{2}$ ' long, rich p; cap linear-lanceolate, obtuse, thin & translucent, = ex: sds few & rather large, oval, faintly reticulate, with a blunt and very prominent apiculation at one end, merely mucronate at the other. Western slopes of the Washoe mts., Nev, J1 1889, C F. Sonne." P 2:23.
E. ANGUSTATUS Greene, Cal ac b 1:99. Cal.
E. AUSTINAE P 1:36. Modoc Co.
E. BICOLOR G 7:381. B 1:564 as M: b.
E. BIGELOVII G, Pac Ry R 4:121. B 1:564 as M: B. Greene, Cal ac b 1:102, Cal, Ut. A 1:230 as M: B.
E. BOLANDERI Greene, lc 105. Jepson Br 1:12. = M: B.
E. BREVIFES Greene, Cal ac b 1:105, SBAR, Baja. A 1:231 as M: b
E. CLIVICOLA M 1:60.
E. COULTERI Harv & G, ex Bth 329. B 1:563 as M: tricolor.
E. CUSICKII P 1:36. Ore, Wash.
E. DOUGLASHII Bth, in DC Prodr 10:374. B 1:563 as M: D.
E. FREEMONTII DC, Prodr 10:374. Parry Wyo 17. Greene Cal ac b 1:103. Baja. Mohave. B 1:565 as M: F. Wat, Bot King 226 = M: nanus fide B 1:564.
E. LATIFOLIUS Greene, Cal ac b 1:99 Guad. A 1:230 as M: l.
E. MOHAVEENSIS Greene, Cal ac b 1:106. Mohave. A 1:230 as M: M.
E. SUBSEUNDUS P 1:37 (*Mimulus* s of G).
E. TOLMIAE Bth, DC, Prod 10:374. B 1:564 as M: nanus.
E. TORREYI Greene, Cal ac b 1:104. = M: T.
E. KELLOGGII Cur, ex Greene, Cal ac b 1:100.
E. LAYNEAE Greene, Cal ac b 1:104. = M: leptaleus.
E. LEPTALEUS Greene, Cal ac b 1:101. = M: l.
E. PARRYI Greene, Cal ac b 1:104. = M: P.
E. PICTUS Greene, Cal ac b 1:106. Cal.
E. BATTANI Greene, Cal ac b 1:105. = M: R.
E. TRICOLOR Greene, Cal ac b 1:99. = M: t.
EUPHORBIACEAE A 1:281d.
EUPHORBIA A 1:282d.
EUPHORBIA ALBOMARGINATA T.-G. T & G, Pac Ry R 2 pt, 174 (1855). P 1:208 Cedros. Da 16. Ab 235. A 1:283d.

Coville, CNH, 4:194. Argus mts, etc.
Type locality: "head-waters of the Colorado."

Yuma, Arizona (Parish 697).

EUPHORBIA ARENICOLA Parish.

A 1:84 fdr.

E. ARKANSANA E & G, Bost J nat hist

5:261. B 2:75 as dictyosperma.

E. BARTOLOMAEI P 1:290. Baja.

EUPHORBIA BAJA-CALIFORNICA Millsp.

A 1:284.

Sand dunes near Quintin (Or 132), distributed as *E. micromera*)

E. BENEDICTA P 1:263. San Benito Isl.

E. BISSELEATA Z 1:347.

E. BRANDEGEI Millsp, Cal ac pr, sr 2,

2:226. Magdalena Isl.

EUPHORBIA CALIFORNICA Benth.

A 1:284.

Hagenbuck, Erythra 4:3.—"The Mexicans call this Golondrina, and consider it a cure for the bite of the rattlesnake."

The name Golondrina is derived from the resemblance of the plant to a swallow's nest fide Dr. Manuel Urbina.

E. CAMPESTRIS C & S, Linnaea 5:84. B 2:76. Mex.

E. COMONDUANA Millsp, Cal ac pr, sr 2, 2:229. Comodu, Baja.

E. CONJUNCTA Millsp, Cal ac pr, sr 2, 2:227. Purissima, Baja.

E. CRENULATA E, bot Mex bound 192. B 2:75 as leptocera. M 1:55 ss.

Variety **FRANCISCANA** Norton, Mo Bot Gard R 11:38. M 1:56 as Tithymalus F.

EUPHORBIA DENTATA Mx.

Verde Co., Arizona (Orcutt).

A 1:284.

Variety **GRACILIMA** Millsp, P 2:90. Z

1:128. Ar.

EUPHORBIA DICTYOSPERMA F.&M. Santa Ana, Cal. (Orcutt).

R 2:75. Da 16. M 1:56 as Tithymalus d. A 1:75 d. 284.

EUPHORBIA ERIANTHA Benth.

B 2:74. A 1:284.

CD (Parish); Magdalena Island.

E. ESULAEFORMIS Schauer. B 2:76 as campestris.

E. EXIGUA L. Millsp, P 2:90. Santa Clara, Cal.

E. FENDLERI Millsp, P 2:87.

Variety **CHAETOCALYX** Boiss, DC 15 (2): 39. Millsp. P 2:87, El Paso, Tex; NM; Ar.

E. GEMINOLOBA Millsp, Cal ac pr, sr 2, 2:228. Baja.

E. GLYPTOSPERMA E, Mex bound R 186. B 2:74.

Variety **TENERIMA** E.

Millsp, P 2:89. Mogollon mts. Ar.

E. GREENEI Millsp, P 2:88. Id. Z 1:128.

E. HARTWEGIANA Boiss, DC Prodr 15:

31. B 2:73 as albomarginata

E. HETEROPHYLLA L, sp pl 453.

Variety **ERIOCARPA** Millsp, Cal ac pr, sr 2, 2:230. Comodu, Baja.

Variety **GRAMINIFOLIA** E. Verde Co, Ar!

E. HINDSIANA Bth, bot Sulph 51. Baja. Z 1:347.

EUPHORBIA HIRTULA Engelm.

B 2:74. Ha 93. A 1:284.

Southern and Baja California.

E. HYPERICIFOLIA L, Hort Cliff 198. WI. Baja.

E. INAEQUILATERA E, Mex Bound R 187. B 2:74 as serpyllifolia.

E. INCISA E Ives R 27. B 2:76 as schizoloba.

E. INVOLUTA Millsp, Cal ac pr, sr 2, 2:227. Baja.

E. JONESII Millsp, P 2:89. Ar.

E. LABEDANA Millsp, P 2:88. Laredo, Tex.

E. LATHYRIS L, sp pl 457. B 2:76.

EUPHORBIA LEPTOCERA Engelm.

Davidson, Erythra 2:30. Catalina.

B 2:75. M 1:55. A 1:284.

E. LEUCOPHYLLA Bth, bot Sulph 50.

Baja. Z 1:272, 2:149.

EUPHORBIA LONGICRURIS Scheele.

Euphorbia, peploides Nuttall.

Santa Ana, Cal. (Orcutt)

A 1:284.

E. MAGDALENAE Bth, bot Sulph 50. Millsp, Cal ac pr, sr 2, 2:224. Baja.

EUPHORBIA MELANDENIA Torrey.

A 1:283d. B 2:73 as

Abrams, Fl LA 235. Gabriel mts.

Euphorbia polycarpa vestita Watson.

E. MICROMELANDIA Boiss. A 1:284 as polycarpa var. Baja.

EUPHORBIA MISERA Benth.

Bth, bot Sulph 51. P 1:208 Cedros. B 2:74. Da 16. A 1:284.

A low rigid shrub, often densely covered with lichens; abundant on Point Lema, SD; Baja.

E. NEOMEXICANA Greene. A 1:75 as serpyllifolia variety n.

EUPHORBIA NUTANS Lag.

Ab 236. A 1:283d.

EUPHORBIA OCCIDENTALIS Drew.

A 1:283 fdr.

E. OCELLATA D & H, Phil ac J, sr 2, 3:46. Pac Ry R 5:15. B 2:72.

EUPHORBIA PALMERI Engelm.

B 2:75. A 1:76d.

EUPHORBIA PARISHII Greene.

Cal ac b 2:56. A 1:284.

Mohave (Parish 1384).

E. PEDICULIFERA E, Mex Bound R 186. B 2:73

Variety **MINOR** Millsp, Cal ac pr, sr 2,

2:227. Baja; Santa Margarita Isl.

E. PEPELOIDES Nutt, Am phil sc tr, n s, 5:172. A 1:284 as longicruris.

EUPHORBIA PEPLUS Linn.

Parish, Erythra 3:61.—"Occasionally in gardens at Sber."

A 1:284.

E. PETRINA Wat 24:75. Baja.

E. FILULIFERA L, sp pl 454

Variety **PROCUMBENS** Boiss, DC 15 (2): 21. Millsp, P 2:87. Fla.

E. PLATYSPERMA E ex B 2:482.

EUPHORBIA POLYCARPA Benth.

A 1:284d. B 2:73. Da 16. Ab 235.

Bentham, Bot Sulph 50 (1844).

Type locality: "Bay of Magdalena," Baja.

Coville, CNH 4:194.

Abrams, Fl LA 235. Santa Ana mts.

Variety **MICROMERA** Millsp.

CD (Cargo Muchacho, Or 2072; Dos Cabezas, Or 2198).

A 1:284

Variety **VESTITA** E. Da 16. B 2:73.

A 1:283 as melandenia.

E. PSEUDOSERPYPHYLLIFOLIA Millsp, P 2:87. Ar.

- E. PURISSIMA** Millsp, Cal ac pr, sr 2, 2:225. Baja.
E. PYCANTHEMA E, bot Mex bound 188. Baja.
E. SANGUINEA H & S. Z 1:128.
E. SERPENS Kunth, HBK Nov Gen et sp 2:41. Magdalena Isl.
EUPHORBIA SERPYLLIFOLIA Pers. Pers. Millsp, P 2:82-3. A 1:74d. B 2:74, 483. Ab 236. Z 2:127.
 Variety **CONSANGUINEA** Boiss. A 1:75d.
 Variety **NEO-MEXICANA** Millsp. A 1:75d.
 Variety **RUGULOSA** Engelm. A 1:75d.
E. SCHIZOLOBA E, Am ac pr 5:173. B 2:75. =incisa fide IK.
EUPHORBIA SETILOBA Engelm. B 2:73. Cov 194, Funeral mts. A 1:284. Santa Ana, Cal. (Orcutt).
E. SUBPUBENS E. B 2:76.
EUPHORBIA TOMENTULOSA S. Wat. A 1:75 fdr. Baja!
E. VELUTINA Greene, Cal ac b 2:57. Baja?
E. WATSONI Z 1:347.
EUPHORBIA WRIGHTII T. & G. A 1:284. Santa Ana Cal. (Orcutt).
E. KANTI E. Millsp, Cal ac pr, sr 2, 2:228. Baja.
EUREYNCHIUM Schimp. Moss. = Hy-pnum fide. B 2:415.
E. COLPAPHYLLUM Sulliv Muse suppl 95 t 71. B 2:415 as H: c.
E. MYOSUROIDES Schimp. B 2:414 as H: m.
E. STOKESII Bruch & Schimp, Bryol Eur t 526. B 2:416 as H: S.
E. STRIGOSUM Bruch & Schimp, Bryol Eur t 519. B 2:415 as H: s.

Genus EUROTIA Adanson.

EUROTIA LANATA Moq. B 2:56, "Of good repute as a remedy for intermittents." CD. Mohave, Agua Dulce, Baja (Br).
EUTOCA R Br. B 1:508 as Phacelia.
E. ALEIFLORA Nutt. B 1:513 as P. viscida var.
E. ABETIOIDES H & A. B 1:515 as Con-anthus a; T. Ives r =Emmenanthe glaberima fide. B 1:514.
E. ERACHYLOBA Bth, L sc tr 17:277. B 1:510 as P: b.
E. DIVARICATA Bth, lc, 278. B 1:511 as P: d.
E. DOUGLASHII Bth, lc, 276. B 1:510 as P: D.
E. FRANKLINII R Br, App Frank Voy t 27. B 1:510 as P: F.
E. GRANDIFLORA Bth, lc 278. B 1:513 as P: g.
E. LOASAEOFOLIA Bth, lc, 277. B 1:509 as P: l.
E. LUTEA H & A, bot Beech suppl 374. B 1:514 as Emmenanthe lutea.
E. MENZIESII R Br, lc 764. B 1:510 as P: M.
E. MULTIFLORA Douglas ex Lehm. Pu-gill 2:19. B 1:510 as P: Menziesii.
E. PHACELIOIDES Bth, lc, 279. B 1:511 as P: circinnatiformis.
E. SERICEA Graham. B 1:518 as P: s.
E. SPECIOSA Nutt, Gamb 158. B 1:513 as P: grandiflora.
E. VISCIDA Bth, bot reg t 1808. B 1:513 as P: v.
E. WRANGELIANA F & M. B 1:511 as P: divaricata.
EVOLVULUS L, sp pl ed 2, 391 (1763).
E. ALSINOIDES L, sp pl ed 2, 392. Baja.
EUTRIANA Trin, Fund Agrest 161 (1820). =Eoutelouia fide IK.
E. ARISTOIDES Trin, Gram Unif 242. B 2:291 as B: a. Kunth, Enum 1:95.

Genus EVAX Gaertn.

EVAX CAULESCENS A. Gray. B 1:337, 2:456.
 Variety **SPARSIFLORA** A. Gray. Baja! SD! San Luis Obispo.
EXACUM L Diss Dass 6 (1747).
E. INFLATUM H & A, J bot 1:285. B 1:480 as Microcala quadrangularis.
E. QUADRANGULARE Willd sp pl 1: 636. B 1:480 as Microcala q.
EYSENHARDTIA HBK nov Gen et sp 6:489 t 592 (1823).
E. SPINOSA E, Ex G, Bost J nat hist 6:174. Baja.
FABRONIA Raddi. Moss.
F. FUSILLA Raddi. B 2:405.
FAGOPYRUM Tourn, ex Hall, Enum Stirp Helv 1:172 (1742).
F. ESCULENTUM Moench Meth 290. B 2:6.
FALLUGIA Endl Gen 1246 (1840).
F. MEXICANA Walp Rep 2:46 =para-doxa fide IK.
F. PARADOXA Endl Gen 1246. B 1:175. Ut; Mex. Providence mts (Cooper).
FATSEA Decne & Planch, Rev Hort (1854) 105.
F. HORRIDA B & H Gen 1:939. B 1: 273. Z 2:267. P 3:72, 84.
FENDLERIA E & G in Smith Contr 3:77 t 5.
FENDLERIA Steud, syn Pl Gram 1:419 (1855). =Oryzopsis.
F. RYCHELYTEOIDES Steud. B 2:283 as Ericocoma cuspidata.
F. BUPICOLA G, Pl Wright 77. Br, Colo 228, 236. Z 2:102.
FERRARIA A 1:365.
F. UNULATA A 1:365d.
FENZLIA Bth, bot reg sub t 1622 (1833). =Gilia fide IK.
F. CONCINNA Nutt, Phil J, n s, 1:157 (1847). B 1:490 as G: dianthoides.
F. DIANTHIFLORA Bth lc. B 1:490 as G: dianthoides.
F. SPECIOSA Nutt, lc. B 1:490 as G: dianthoides.
FERULA L, Gen, ed 1, 75 (1737).
F. DISSECTA G 7:348. B 1:271 as dis-soluta.
F. DISSOLUTA Wat. B 1:271.
F. MULTIFIDA G 7:348. B 1:271.
F. NEWBERYI Wat 11:145. B 1:271.
FILAGO L, syst ed 1 (1735). A 1:187d.
FILAGO ARIZONICA A. Gray. G 8:652. B 1:338. Quad; Ar.
F. CALIFORNICA Nutt, Am phil sc tr 7:405. Greene, Cal ac b 2:402 Cruz. Br 1:212 Rosa. Ab 409. Da 9. B 1:338. A 1:187d.
FILAGO DEPRESSA A. Gray. CD (Parry, Parish).
F. PARVULA T & G Fl 2:432. B 1:338 as Californica.
F. SPATHULATA Presl, Delec Prag 101. Eu. B 1:338.

FLOEKEA Willd. in Ges Naturf Fr
Neue Schr 3:448 (1801).

F. DOUGLASHII Baill Hist Pl 5:20, f 50-54. B 1:95 as *Limnanthes* D. Par 130t.
F. PROSERPINACOIDES Willd. lc 449.
B 1:95. Z 2:228. Wash; Ut; northern Atlantic states.

FISSIDENS Hedw.

F. ADIANTOIDES Hedw. Eu. B 2:374.

F. GRANDIFRONS Bridel. B 2:374.

F. LIMBATUS Sulliv. Pac Ry R 4:185t1.
B 2:374.

F. VENTRICOSUS Lesq. Cal ac mem
1:7. B 2:374.

Genus **FOENICULUM** Adans.

A 1:268d.

FOENICULUM FOENICULUM Karst.

A 1:268d. Ab 288.

Foeniculum vulgare Goertn.

F. OFFICINALE All. Fl Pedem 2:25.

Greene, Cal ac b 2:399 Cruz.

FOENICULUM VULGARE Gaertn.

Davidson, *Erythraea* 1:59, LA Co.—Pl
LA Co 6.

Parish, *Zoe* 1:10.

Fennel; Europe; LA (Hasse).

A 1:286 as *foeniculum*.

FONTINALIS Dill.

F. ANTIPTYETICA L. Engl bot t 359.

B 2:404.

Variety **GIGANTEA** Sulliv. I con Muse
106t 66. B 2:404.

F. CALIFORNICA B 2:404.

F. EATONI Sulliv. B 2:434 as antipty-
retica var; gigantea.

F. FALCATA Hedw. Musc Frond 3t 24.
B 2:405 as *Dichelyma* f.

F. GIGANTEA Sulliv. B 2:404 as anti-
ptyretica var.

F. LESQUEII Sulliv. B 2:405, Ore.

F. MERCEDIONA Lesq. B 2:405 as Neo-
Mex.

F. NEOMEXICANA S & L. B 2:405, NM;
Colo; Cal.

Genus **FOUQUIERA** H. B. K.

FOUQUIERA SPLENDENS Engelm.

Genus **FRAGARIA** Tournefort.

FRAGARIA L. syst ed (1735).

Cx persistent, concave; limb 5-lobed
with 5 alt bractlets, valvate; pet 5, w,
spreading; sta num. in 1 row; carpels
num, smooth; sty lateral, very sh; ovule
solitary, ascending; receptacle much en-
larged and fleshy in fr. conical, scarlet,
bearing the sm turgid crustaceous ak
upon the surface; radicle superior.
Strawberry.

FRAGARIA CALIFORNICA C. & S.

Ha 85, Par 12. B 1:177.

"Mt Strawberry;" of delicious flavor.
Cuyamaca! S Ber mts.

F. CHILENSIS Ehrhart, T & G Fl 7:448.

Par 10. B 1:177. SF to Alk.

F. GRAYANA Vilmorin. B 1:77 as Vir-
giniana var; *Illinoensis*.

F. LUCIDA Vilmorin. B 1:179 as Cali-
fornica.

F. VESCA L. B 1:177. Ckl w 5:11. (Bth
309 = *Californica* fide B 1:177.)

F. VIRGINIANA Ehrhart. B 1:177. G,
man 155.

Variety **ILLINOENSIS** G man 155. B
1:177.

FRANGULA Tourn. = *Rhamnus* fide IK.

FCALIFORNICA G, Gen III 2:178. B 1:
101 as R: C.

FRANKENIACEAE A 1:263d.

Genus **FRANKENIA** Linnaeus.

FRANKENIA A 1:264d.

Characters of the family.

FRANKENIA GRANDIFOLIA.

Br 1:107 Rosa. A b 252. Da 3. B 1:60.
2:433. P 1:86. Mig. Greene, Cal ac b
2:391 Cruz. A 1:88, 264d.

Cham & Schlecht, *Linnaea* 1:35 (1826).

Fls pink; calyx-tube furrowed. San
Francisco to Mexico; Arizona; Nevada;
saline soil.

Abrams, Fl LA 252.—Common in sa-
line marshes. Flowering all summer.

Type locality: "in sabulosis Novae
Californiae ad portum St. Francisci."

Variety **CAMPESTRIS** G. A 1: 264.

F. JAMESI T, G 8:622. B 1:61. Colo, NM.

FRANKENIA PALMERI.

Watson, Am ac pr 11:124.

Type locality: eastern side of Baja
National City, Cal (Or 33).

Shrub, a ft. high, fls w. San Diego,
south.

P 1:263, San Benito Isl. P 1:200 Cedros.

Genus **FRANSERIA** Cav.

A 1:88d, 264d. B 1:61.

FRANSERIA AMBROSIOIDES Cav.
San Gregorio, Baja (Br); Arizona;

Mexico.

FRANSERIA BIPINNATIFIDA Nutt.

Along the seashore, Wash; Santos!
Cruz; San Miguel I; Cat (Lyon).

FRANSERIA CAMPHORATA Greene.

Guad; Cerros; throughout So Baja (Br).
B 1:345. Z 2:125. P 1:90 Mig.

Variety **VISCIDA** Eastwood, Cal ac pr,
III, 1:117. M 1:6 as Gaertneria C: v.

FRANSERIA CHENOPODIFOLIA Benh.
Bth, bot Sulph 26. P 1:290 San Barto-
leme bay, Baja. P 1:204 Cedros. B

1:345. A 1:60d.

F. CUNEIFOLIA Nutt. Am Phil sc tr,
ns, 7:344. B 1:345 as *Chamissois*.

F. DELTOIDEA T. Pl Frem 15. B 1:345.
A 1:60 as *chenopodifolia*.

FRANSERIA DUMOSA Gray.

Frem 2d r 316. Cov 129. B 1:345.

CD; Utah; Arizona; El Llano de San-
tana, Baja (Br). A low branching shrub

1-3 ft high, valuable for forage in the
desert region.

FRANSERIA ERIOCENTRA A. Gray.
G 7:355. Cov 129 Charleston mts. B 1:345.

Arid regions of Cal? Nevada, Utah, Ari-
zona.

FRANSERIA FLEXUOSA A. Gray.

A 1:60d.

F. HISPIDA Bth, bot Sulph 25. B 1:346
as *tenuifolia*.

FRANSERIA HOOKERIANA Nutt.

Z 2:125. B 1:345. Da 9. Cal specimens be-
long to *acanthocarpa*.

Washington to Baja California; Texas.

FRANSERIA ILICIFOLIA A. Gray.

B 1:615.

Cantiltes (Palmer); Cajon de Santa
Maria, Baja (Br); Arizona.

F. PUMILA Nutt, Am phil sc tr, ns, 7:
344. B 1:345. 615. = *Ambrosia* p fide IK.

FRANSERIA TENUIFOLIA A. Gray.

B 1:346. Z 2:125.

Texas; Colo; Mexico; Hawii; Santa
Margarita Island; LA (Parish 744).

Genus FRASERA Walter.

- F. ALBIGAULIS** Hook Fl t 154. B 1:483, 484. 2: 464.
F. ALBOMARGINATA Wat, bot king 280. B 1:484. Z 2:232. Ut. Nev.
F. AMPLA P 4:186.
F. CAROLINENSIS Walt Fl Carol 88. B 1:483.
F. MACROPHYLLA P 4:186.
FRASERA NITIDA Benth.
 Bth 322. B 1:484. Sber mts. Ore.
F. PANICULATA T, Pac Ry R 4:126: B 1:484. NM.
FRASERA PARRYI Torr.
 T, Mex bound 156. B 1:484. Da 11.
 Ha U 102. LA Co (Parry); Baja mts!
F. SPECIOSA Douglas. B 1:484. P 4:186.
 Hook Fl 2:66 t 153.
F. THYRSIFLORA Hook, Kew J bot 3:288. B 1:483. Ore.
F. UTAHENSIS M E Jones, Z 2:13. Ut.
F. VEMOSA P 4:185.
F. VERTICILLATA Raf, Med Fl 1:196.

Genus FRAXINUS Tournefort.

- A 1:199d.
F. ANOMALA Wat, bot king 283. Br Colo. 229, 241. Z 2:232. Ut.
FRAXINUS DIPETALA H. & A.
 Abrams, Fl LA 302.—"Occasional in canyons."
 Bot Beech 362 t 87. Da 9. B 1:472. 2:462. A 1:200d.
 Variety **TRIFOLIOLATA** Torrey.
 Baja! Las Huevitas, Baja (Br). A 1:200.
F. GRANDIFLORA Rafin, Alsog Am 33. (Bth, bot sulph 33 =oregana fide B 1:472.)
FRAXINUS OREGANA Nuttall.
 Nuttall, Sylva 3:59 t 99.
 Jepson, Erythea 1:15.—"Scott valley, Handsome trees, 70-90 ft hl."
 B 1:472. Da 9. A 1:200d.
 Abrams, Fl LA 302. San Gabriel and Lytle creek canyons.
F. FISTICIAEFOLIA T, Pac Ry R 4: 128. Baja?
F. PUBESCENS Lam, Enc 2:548.
 Variety ———? Hook Fl 2:51. B 1:472 as oregana.
FORESTIERA Poir, Enc suppl 1:132 (1810).
F. FROMEXICANA G 12:63, NM. LA Co Sber Co (Parish).

Genus FREMONTIA Torrey.

- Torrey, Smithson Contr 6:5 t 2 (1854). A 2:408d.
FREMONTIA CALIFORNICA Torrey.
 A 2:408d. B 1:88. 2:437.
 Tall shrub: fls y, axillary, apetalous.
F. VERMICULARIS Torr, Frem r 95, 317 t 3. B 2:59 as sarcobatus vermiculatus.
FREMONTODENDRON Cov, based on Fremontia.
F. CALIFORNICUM Cov 74. Ab 250. Par. F. ALBA K 1:46. B 2:168 et. Cur 1:149 as liliacea.

Genus FRITILLARIA Linnaeus.

- FRITILLARIA ATROPURPUREA** Nutt B 2:169. Z 2:233. So Cal (Parish 1858).
F. BIFLORA Lindl. Par 272. Da 17. A 1:183d. B 2:168. Ab 88.

FRITILLARIA COCCINEA.

- Par 352.
F. GRAYANA Reichb, f & Baker, Trim J bot ser 2, 7:262. B 2:168 as biflora.
F. KAMTSCHATCENSIS T, Pac Ry R 4:146. B 2:168 as biflora. P 3:78.
FRITILLARIA LANCEOLATA Pursh Parsh, Hook Fl 2:181 t 193 B. Par 270 t B 2:169. Z 2:376.
 Variety **GRACILIS** Wat 15:259. Cur 1: 150 as multiflora.
FRITILLARIA LILIACEA Lindl. Par 273. B 2:168. Z 2:376.
FRITILLARIA MULTIFLORA Kellogg. K 1:57, Pacific 8 Je 1855, Cur 1:150 cites parviflora as a synonym. B 2:169 as parviflora.
F. MULTISCAPIDEA K 1:46. B 2:171 et Cur 1:150 as Erythronium purpurascens Wat.
F. MUTICA Lindl. B 2:169 as lanceolata var: floribunda.
FRITILLARIA PARVIFLORA Torr. B 2:169. Z 2:167. Par 272.
FRITILLARIA PLURIFLORA Torr. B 2:169.
FRITILLARIA PUDICA Spreng. B 2:170. Parry, Wyo 18. Par 272.
FRITILLARIA RECURVA Benth. Par 350. B 2:168.
F. VIRIDIA K 2:19. Cur 1:149. B 2:169 as lanceolata.
FUMARIA L, syst ed 1 (1735).
F. FORMOSA Andr, bot rep 6: t 393. B 1:24 as Dicontra f.
FUNARIA Schreber.
F. CALCAREA Wahl. Eu. Ut. B 2:388. Cajon Pass, Cal.
F. CALIFORNICA Sulliv & Lesq. B 2: 388. Ukiah, Cal. Ore.
F. CALVESCENS Schwaegr. B 2:389 as hygrometrica var: c.
F. CONVOLUTA Hampe. B 2:389.
F. HIBERNICA Hook & Tayl. B 2:389 as calcarea.
F. HYGROMETRICA Hedw. B 2:389.
 Variety **CALVESCENS** Bruch & Schimp. B 2:389.
F. MEDITERRANEA Lindl. B 2:389 as calcarea.
F. MUHLENBERGII Schwaegr. B 2:389
GILIA ABROTANIFOLIA Nuttall.
GILIA ANDROSACEA Stend.
 See Linnanthus androsaceus.
GILIA AUREA Nutt.
 See Linnanthus aureus.
GILIA BELLA A. Gray.
GILIA BIGELOVII A. Gray.
GILIA CALIFORNICA Benth.
 See Leptodactylon Californicum.
GILIA BREVICULA A. Gray.
 Mohave!
GILIA CAPITATA Dougl.
 Oregon; Cal; common in cultivation.
GILIA CILIATA Benth.
 Ha U 103. CD; SD mts (Parish 440); Nevada.
 See Linnanthus ciliatus.
GILIA DEMISSA A. Gray.
 Mohave? Utah; Arizona.
GILIA DICHOTOMA Benth.
GILIA HALLII Parish.
G. INCONSPICUA Dougl, Hook, bot mag t 2883. A 1:177d. B 1:493. Ab 315. Da 11.

- Variety **SINUATA** G. Ha 104. B 1:498.
G. INTERTEXTA Steud. Nom ed 2, 1: 683. B 1:493. P 1:131 as *Navarretia* 1 (Hook Fl 2:75).
G. KENNEDYI Porter, bot gaz 2:77. B 2:465 as *Parryae*.
G. LAESNI G 11:84. B 1:497.
G. LATIFLOA G, Syn Fl 2:147. B 2: 466. Ha 104. SD & LA Co.
Variety **EXILIS** G. Ab 315. A 1:177d.
GILIA LATIFOLIA S. Watson.
Am Nat 9:347. So Ut Cov 155, Panamint mts.
CD (Parish 253).
GILIA LAXA Vasey & Rese.
Quintin (Palmer).
G. LEMMONI G, B 2:465. Da 11. Ha 104. P 2:257 et. A 1:175, 177 as *Linanthus* L.
GILIA LEPTANTHA Parish.
A 1:78 fdr.
G. LEPTOMERIA G 8:278. B 1:498. Z 2:232. Wat, bot king 270 t 26 f 6, 7.
G. LEUCOCEPHALA G 8:269, syn fl 2 (1):142. B 1:494. P 1:131 as *Navarretia* 1.
G. LINIFLORA Bth, bot reg sub t 1622. B 1:489. Z2:95, 364. A 1:175, 177 as *Linanthus* 1.
Cal, common; Baja! SD! Sber (Parish 462).
Variety **PHARNACEOIDES** Gray.
Da 11. =*Linanthus* p.
Similar to the type except in the reduced size, a span hi, with capillary branches, the sometimes pale flesh-colored cor about 4 li in diam. Ore; Ut; BC; Baja! SD! thru the Rocky mts.
Gilia pharnaceoides Hooker, Fl 2:74t 161.
G. LONGIFLOA Z 2:250.
G. LONGITUBA Bth 324, 325. A 1:175 as *Linanthus parviflorus*. M 1:43 as *Linanthus longituba*. =G: micrantha fide IK.
G. LUTEA Steudel, Nom ed 2, 1:681. B 1:491 as *micrantha* (A 1:175 as *Linanthus parviflorus*).
G. LUTESCENS Steudel, .om ed 2, 1: 681. B 1:495. 2:465. A 1:176 as *Gilia floccosa*.
GILIA MACULATA Parish.
A 1:89 fdr.
G. MELLITA P 1:71, 72, 134 (as *navarretia mellita*).
GILIA MICRANTHA Stend.
Throughout So Cal; Baja! LA.
Steud, nof 1:684. P 1:91 Mig. B 1:491. Da 11. A 1:175 as *Linanthus parviflorus*.
G. MICROMERIA G 8:279. B 1:499.
G. MILLEFOLIATA F & M, Sem Petr 35 (1838). B 1:498 as *multicaulis*. Greene, Er 3:103.
G. MINIMA G 8:269. B 1:494. Z 2:250. P 1:131 as *Navarretia* m.
G. MINUTIFLOA Bth, in DC 9:315. B 1:499.
GILIA MULTICAULIS Benth.
Eth, bot reg t 1622. Ab 314. Greene, Cal ac b 2:407 Cruz. B 1:497. Da 11. A 1:7d, 346.
GILIA NEVINII A. Gray.
Br 1:204, 214, Z 1:114.
Cat. Cruz and Rosa (Br).
G. NUDICAULIS G 8:266. B 1:492. Parry, Wyo 7. Cov 556, White mts, Cal. P 3:304 as
GILIA ORCUTTII Parry.
Dav ac pr 4:40, Baja! A 1:78 fdr.
G. PALLIDA M 1:43. Sonoma Co, Cal.
GILIA PARRYAE A. Gray.
Br 2:465. Z 2:77.
Mohave (Parry); Kern Co.
G. PARVULA P 1:72, 134 (as *Navarretia* p). Rydb, N Y bot gard mem 1:320 (1900) =*Gymnosteris parvula* fide M 1:3.
G. PHARNACEOIDES Bth, bot reg sub t 1662. B 1:489. Ha 104. P 2:254 as *Linanthus pharnaceoides*. =*liniflora* fide IK.
G. POLYCLADON T, bot Mex Bound 147. B 1:496. Z 2:232.
G. PROSTRATA G 17:223. Da 11. A 1: 169 et. P 1:131 as *Navarretia* p.
G. PUBESCENS Steudel, nom ed 2, 1: 684. P 1:133 as *Navarretia* p.
G. PULCHELLA Dougl ex Bth, bot reg sub t 1622. B 1:496.
G. PUMILA Nutt, Phil ac J ns, 1:156 (1847. B 1:496 Texas.
GILIA PUNGENS Benth.
Oregon to Ubl, Baja (Br). Arizona.
Z 2:165. B 1:493. (Hook, bot mag t 2947 =*squarrosa* fide B 1:493; (P 1:133 as *Navarretia squarrosa*.) Ha 105. Parry Wyo 5.
A span to ft hi, bushy; more or less viscid-pubescent, or nearly glab; rigid lvs little spreading or erect; cor w or rose-p; the lobes nar'er and half as large as in Californica; anth borne in throat, oblg; ovules 8 or 10 in each cell. Ore; Nev; Ar; Baja.
Cantua pungens T. N Y Lyc an 2:221.
Variety **HALLII** Milliken, Univ Cal pub bot 2:43. M 1:146 as *Leptodactylon Hallii*.
Variety **Hookeri** Gray.
Ha 105?—So Cal (Parish 1841).
Gilia Hookeri Benth.
Variety **SUARROSA** G, 8:268.
Lf-divisions subulate, stouter, soon spreading or squarrose-recurved. Nev.
M 1:146 as *Leptodactylon patens* (not *Gilia squarrosa* H & A).
Variety **TENULOBA** Milliken, Univ Cal pub bot 2:43. M 1:146 as *Leptodactylon tenuilobum*.
G. PUSILLA Bth, bot reg sub t 1622. B 1:489. A 1:175 as *Linanthus* p.
Variety **CALIFORNICA** G 8:263. Cor 3" lg, throat oft brownish, ex 1½" lg; ped oft 1' lg. Cal. Nev, Ut. Bth 325 as filipes.
G. SCHOTTII G, bot king 267. B 2:466. P 3:30 as *Langloisia* S.
G. SESSEI Don. G 17:223. P 1:128 as *Collomia heterophylla*.
G. SETOSISSIMA G 8:271. B 1:489. 2: 465. P 3:30 as *Langloisia* s.
G. SINUATA Dougl ex Bth in DC 9:313. =*parviflora* fide IK. B 1:498 as *inconspicua* var: S.
G. SQUARROSA H & A, bot Beech 151. B 1:493. P 1:133 as *Navarretia* S.
G. STAMINEA Ab 314. A 1:344d.
G. STRICTA Liebm, Ind sem hort Hafn (1853). B 1:489 as *multicaulis* var: *tenera*.
G. SUBRUDA Tex G 8:276. B 1:497.
GILIA TENELLA Benth.
Bl:491. Da 11. Z 2:165. A 1:174 as *Linanthus bicolor*.
Puget Sound to Sber Co (Parish 313).
G. TENUIFLOA Bth, bot reg sub t

1622. A 1:168d B 1:498. Da 11.
 Variety *LATIFLORA* G. B 1:498. B 2:
 466 as *latiflora* G. A 1:169 fdr. Da 11.
 Variety *ALTISSIMA* Parish Ab 315. A
 1:169 fdr.
GILIA TENUILOBA Parish.
 A 1:8 fdr. M 1:146 as *Peptodactylon tenuilobum*.
G. TRICOLOE Bth, bot reg sub t 1622. B
 1:498. Par 292. Parish, Er 6:90 (Antelope valley, Davidson), Cal.
G. TRIFIDA Bth, in Hook Kew J 3:291 (1851). B 1:496 as *pumila*.
G. VEATCHII Parry, Cal ac b1:198. Green, Cal ac b 1:198 Cedros (Veatch 1859). P 1:205.
G. VIOLACEA M 1:56. Nevada Co, Cal.
G. VIRGATA Steudel, nom ed 2, 1:684. B 1:495. Da 11. Ab 316. A 1:176, 169d.
 Variety *FLOEBUNDA* G. Ab 316. A 1:169d.
G. VISCIDULA G 8:269. B 1:494. Bth 325; A 1:169 et. P 1:133 as *navarretia* v. Variety *HETERODOXA* G, syn fl supp 409. P 1:134 as *navarretia* h.
G. WATSONI G 8:267. B 1:492.

Genus *GITHOPSIS* Nuttall.

Slender Ann with rather sm linear-oblong coarsely toothed sessile lvs; fls simply terminating the branches or becoming lateral, erect, all alike: ex-tube club-shaped, strongly 10-ribbed, adnate to the summit of the ovary, its limbo of 5 long and linear foliaceous lobes: cor tubular-campanulate, 5-lobed: fil short, dilated at the base; anth long, linear: ova 3-celled; stigma 3-lobed: cap club-shaped, coriaceous, crowned with the rigid cx-lobes of its own length, strongly striate-ribbed, many-sided, opening when the somewhat persistent base of the sty falls away by a round hole in its place: sds fusiform-oblong.

GITHOPSIS DIFFUSA A. Gray.

Genus *GLAUX* Linnaeus.

GLAUX MARITIMA Linn.

Sea Milkwort: in saline soil round the northern hemisphere.

GLYCERIA REMOTA Fries.

San Bernardino mts (Parish 1661).

Genus *GLYCYRRHIZA* Linnaeus.

GLYCYRRHIZA LEPIDOTA Pursh.

Genus *GLYPTOPLEURA* D. C. Eaton.

GLYPTOPLEURA MARGINATA Eaton.

Mohave! Nevada.

GLYPTOPLEURA SETULOSA A. Gray.

Mohave (Parry). Utah.

GNAPHALUM L, Gen ed 1, 250 (1737).

A 1:187d.

G. ALBATUM M 1:141.

GNAPHALUM BICOLOR Biol.

A 1:60fdr.

G. CALIFORNICUM DC. A 1:187d. Er 1:12. B 1:341 as *decurrens* var: C. Ab 410. Par 63.

G. CHILENSE Spreng. Ab 410. Ha 128.

Da 9. A 1:188d. Cotton-batting plant.

GNAPHALUM DECURRENS Ives.

Ives, Am J sci 1:380. B 1:341. Da 9. Par 63.

New England; British Columbia to Mexico; Baja.

Variety *CALIFORNICUM* A. Gray.

Greene, Cal ac b 2:402. Br 1:212. B 1:341. Cruz; Rosa; San Clemente Island.

G. FILAGINOIDES H & A, bot Beech

359. B 1:338 as *Filago Californica*.

G. GOSSYPINUM Nutt, Am phil sc tr ns, 7:403. B 1:342 as *palustre*.

G. LEONTOPODIUM L, sp pl 855. Par

63. = *Leontopodium alpinum* fide IK.

G. LEUCOCEPHALUM G, Pl Wright

2:99. Ab 410. A 1:188d.

G. LUTEOALBUM L, sp pl 851. B 1:341.

Cosmopolitan.

G. MARGARITACEUM L, sp pl 850. B

1:341 as *Anaphalis* m.

G. MICROCEPHALUM Nutt, Am phil sc

tr ns, 7:404. B 1:341. Da 9. Ab 410. A

1:159d.

G. NEVADENSE K 5:45. Cur 1:139 as

Antennaria dioica Goertn.

G. FALUSTRE Nutt, Am phil sc tr ns, 7:

403. B 1:342. Da 9. Jepson, Er 1:14. Ab

410. Ha 128. Br Z 1:114 Cat. A 1:160d.

G. PURPUREUM L, sp pl 854. B 1:342,

2:456. Z 2:336, 357. Ab 411. A 1:160d.

Cal ac b 1:402 Cruz. Br 1:212 Rosa.

G. PLANTAGINIFOLIUM L, sp pl 850.

P 3:174 as 4:280 = *plantagineum* fide IK.

G. RAMOSISSIMUM Nutt, Gamb 172.

B 1:342, 2:456. Da 9. Greene, Cal ac b

2:402 Cruz. Ab 410. A 1:160d.

G. SANDWIGENSEM Gaudich, in Freyc

Voy Bot 466. B 1:341, as very probably

the older name of *Sprengelii*.

G. SPICATUM Lam Encyc 2:757. B 1:

342 as *purpureum*.

GNAPHALUM SPRENGELII H. & A.

Guad; Baja; S D! Wash; Cruz; Rosa.

H & A, bot Beech 150. B 1:341. Z 2:357.

Br 1:212. Greene, Cal ac b 2:402. Par

63. P 1:89 Mig. Br Z 1:114 Cat.

G. ULIGINOSUM L, sp pl 856. B 1:342.

G. USTULATUM Nutt, Am phil sc tr

ns, 7:404. B 1:342 as *purpureum*.

G. VIRA-VIRA Molina, Sagg Chili,

149, 354. B 1:341 as seemingly *luteo-*

album.

Genus *GODETIA* Spach.

Spach, hist veg Phan 4:386 (1835). =
Oenothera fide IK.

Simple or branching erect ann with
 alt lvs: fls mostly in lfy racemes or
 spk cx-tube above the ova obconic or
 sh-funneliform: ret 4, broad and sessile,
 entire, emarginate, or 2-lobed, varying
 from phlox- or lilac-p or rose-color to
 nearly w: sta 8, those opp the pet sh'ter;
 anth basifix: ovary 4-celled: cap ovate
 to linear, mostly 4-sided, somewhat cori-
 aceous, often longitudinally ribbed, 4-
 celled, 4-valved: sds in 1 or 2 rows,
 more or less cubical or quadrangular,
 com obliquely pointed at one end, the
 opp end obliquely truncate and with a
 densely fimbriate-toothed or tuberculate
 margin; angles oft prismatic, rendering
 the sd strikingly similar to that of
Mentzelia.

G. ALBESCENS Lindl, bot reg, misc 61
 (1841). B 1:229, 2:448. =OE: a fide IK.

G. AMOENA G Don in Sweet, Hort Brit
 ed 3, 237. =OE: a fide IK. B 1:230. Par

246 t. LA (Davidson).

G. BILOBA Wat, B 1:231. =OE: b fide
 IK.

G. BOTTAE Spach, in Nouv Ann Mus. Par 4:393 (1835). B 1:231. Da 6. Par 246. Ab 267. A 1:165d, 166. =OE: B fide IK.

G. CAVANILLESII Spach, Hist Veg Phan 4:390. B 1:230 as tenella. =OE: t fide IK.

G. DUDLEYANA Ab 267. A 1:165 fdr.

G. EPILOBIOIDES Wat, B 1:231. Ab 268. Da 6. Greene, Cal ac b 2:398 Cruz. A 1:165d. =OE: e fide IK.

G. GRANDIFLORA Lindl, bot reg 1841 misc 61. Par 246. B 1:229. =OE: Whitney fide IK.

G. HISPIDULA Wat, B 1:231. A 1:166. =OE: h fide IK.

G. LEFIDA Lindl bot reg t 1849. B 1:229. =OE: decumbens fide IK.

G. MICROFETALA P 1:32.

Type locality: "Hills along Walnut creek, at the western base of Mt Diablo, My. 1866."

GODETIA PURPUREA S. Watson. B 1:229, 2:448. Z 2:162. Greene, Cal ac b 2:398.

Da 6. Cruz; Monterey; Columbia.

Type locality: Western coast of N Am...
Oenothera purpurea Curtis, bot mag t 352 (1796).

GODETIA PULCHERRIMA Greene. Ab 267 thinks this is *Bottae*. A 1:76 fdr, 165 as *Bottae*.

G. QUADRIVULNERA Spach, hist veg Phan 4:389. Ab 267. B 1:230, 2:448. Da 6. Br 1:203 Cruz, 210 Rosa. A 1:165d. =OE: g fide IK.

G. ROMANZOVII Spach, hist veg phan 4:390. B 1:230. =OE: R fide IK.

G. RUBUCUNDA Lindl, bot reg t 1856. B 1:231 as *amoena* (=OE: a fide IK).

GODETIA TENELLA S. Watson. Steud, nom ed 2. 1:697. B 1:230, 2:448. Da 6. =OE: t fide IK.

Oregon to Chili; fls rose or w.

G. VIMINEA Spach, hist veg phan 4:388. Ab 267. B 1:230. A 1:166d. =OE: v fide IK.

G. VINOSA Lindl, bot reg t 1880. B 1:231 as *amoena* (=OE: a fide IK).

G. WILDENOWIANA Spach, hist veg phan 4:387. B 1:229 as *purpurea* (=OE: p fide IK).

G. WILLIAMSONI Dur & Hilg. Pac Ry R Br in Mem Wern sc 1:37 (1809).

Genus GOMPHOCARPUS R. Brown. R Br in Meur Wern sc 1:37 (1809).

G. CORDIFOLIUS Bth ex G, in B 1:477. Jepson. Er 1:12. Z 2:165.

G. PURPURASCENS G 10:76. B 1:477, 2:463. Greene, as *Solanoa purpurascens*. =Schizonotus p fide IK.

GOMPHOCARPUS TOMENTOSUS A. G. G. B 1:477. Par 386 t.

GONOLOBUS Michx. Fl 1:19 (1803). Heller. Er 1:2. Z 2:165.

G. BIFLORUS Raf, New Fl 4:58 (1836). Nutt ex DC 8:605 as *Chthamalia* b.

Variety **WRIGHTII** G 12:78. M 1:3 as Vinc: w.

G. CYNANCHOIDES E & G, Bost J nat hist 5:251. M 1:2 as Vinc: cyn.

G. FLAVIDALUS Chapm, Fl SUS 368. M 1:2 as Vinc: fl.

G. HASTULATUS G 12:78. M 1:2 as Vinc: h.

G. PARVIFLORUS G 12:77. M 1:2 as Vinc: p.

G. PARVIFOLIUS T, bot Mex bound 166. M 1:2 as Vinc: p.

G. PUBIFLORUS E ex G 12:77. M 1:2 as Vinc: p.

G. SAGITTIFOLIUS G 12:77. M 1:3 as Vinc: s.

GOODYERA R Br, Ait Hort Kew ed 2, 5:197 (1813).

G. MENZIESII Lindl, Gen et sp Orch 402. B 2:136. Par 100 t.

GOERMANIA Britton. A 1:164 fdr.

G. ANOMALA Britton. A 1:165.

G. OBTUSATA Britton. A 1:165.

GOSSYPIUM L, syst ed 1 (1735).

G. DAVIDSONII K 5:82. Cur 1:133. B 1:82. Baja.

G. HARKNESSII Br 2:136. Named in honor of Dr. H. W. Harkness. "A handsome shrub seen only on Santa Margarita Island, where it is common."

G. HERBACEUM L, sp pl 693. B 1:82. Baja.

GEATIOLA (Rupp) L, Gen, ed 1, 333 (1737).

G. EBRACTEATA Bth ex DC 10:505. B 1:570.

G. SPHAEROCARPA Ell sketch 1:14.

G. VIRGINIANA L, syst ed 12, 62. B 1:570. =sphaerocarpa fide IK.

GRAYIA H & A, bot Beech 387 (1841). P 4:225 as *Eremosemium*.

G. BRANDEGEI G 1:101. B 2:56. P 4:225 as E.B.

GRAYIA POLYGALOIDES Hook-Arn. H & A bot Beech 387. B 2:56. Z 2:233. Mohave, Baja, CD. P 4:225 as E: spinosum

G. SPINOSA Moq, in DC 13 (2): 119. B 2:56 as *polygaloides*.

GREGGIA G, Smith contr 3:8 t 1 (1852). Greene, Er 5:75 as *Parrasia*; P 4:225 as *Nerisyrenia*.

G. CAMPORUM G, Pl Wright 9. P 4:225 as N: c.

G. LINEARIFOLIA Wat, 18:191. P 4:225 as N: l.

GRIMALDIA Schrank, in Allg bot Bibl 4:105 (1805). =*Cassia* fide IK. P 4:26 as

GREENELLA G 16:81, Syn Fl 1 (2): 55, 164.

G. ARIZONICA G 16:82. Ar.

G. DISCOIDEA G, 19:2. Cal.

G. HAMULOSA P 1:302, San Bartoleme bay. Baja.

GRIMMIA Ehrh. Moss.

G. ANCISTRODES Mont. B 2:379 as *trichophylla* var. *meridionalis*.

G. APOCARPA Hedw. B 2:377. Yosemite. Eu, etc.

Variety **RIVULARIS** Nees & Hornsch. B 2:378 Yosemite.

G. ATROVIRENS Engl bot t 2015. B 2:369 as *Barbula* a.

G. CALIFORNICA Sulliv. B 2:379. SF.

G. CALYPTRATA Hook. B 2:380. Nev. NM.

G. CONFERTA Funk. B 2:377. Eu, Nev. Cal.

G. CONTORTA Schimp. B 2:378. Eu, Cal.

G. ELONGATA Kaulf. B 2:380. Eu, Yosemite.

- G. HAMULOSA** Lesq. B 2:379. Cal.
G. INCURVA B & S. B 2:378 as Muhlenbeckii.
G. JAMESII Austin. B 2:378. Nev.
G. LEUCOPHAEA Grev. B 2:379. Eu, Nev, Cal, etc.
G. MONTANA B & S. B 2:380. Eu, Nev, SF.
G. MUHLENBECKII Schimp. B 2:378. Eu, Cal.
G. NEVII Muell. Fl 31:485 Torr cl b 5:6. B 2:381 as Rhacomitrium N. Ore.
G. ORBICULARIS James, bot King 403 (not B & S) = Jamesii fide. B 2:378.
G. OVATA Web & Mohr. B 2:379. Eu, Nev.
G. PATENS B & S Bryol Eu t 246; Wilson, Bryol Brit t 19, B 2:380 as Rhacomitrium p.
G. PULVINATA Smith. B 2:378. Ar, Nev, Cal, Eu.
G. SCOLEBI Muell. B 2:377.
G. TENEBRIMA Bot gaz 7: — Z 1:63.
G. TRICHOPHYLLA Grev. B 2:378.
Variety MERIDIONALIS Schimp. B 2:379.
GEINDELIA Willd in Ges Naturf Fr Berl Mag 1:259 (1807).
G. CAMFORUM Ab 393. A 1:339d.
G. CUNEIFOLIA Nutt, Am phil sc tr n s, 7:315. Ab 393. Par 180 t. A 1:245d.
G. DECUMBENS P 3:102.
G. DISCOIDEA Nutt, Am phil sc tr ns, 7:315. B 1:304. = nana fide IK.
G. FASTIGIATA P 3:102.
G. GLUTINOSA Dunal, in Mem mus Par 5:49. B 1:303 (G. latifolia K). Br 1:211. Rosa; inv more or less squarrose; ak auriculate-bordered; pap awns 2-3, sparingly ciliate-scarbrous; very balsamic-viscid during anthesis. Rosa; SF; Humboldt Co.
G. HENDERSONI P 2:18. Lummi Island, Gulf of Georgia.
G. HIRSUTULA H & A bot Beech 147. Par 180. B 1:303.
G. HUMILIS H & A, bot Beech 147. B 1:303.
G. INORNATA P 3:102.
G. INTEGRIFOLIA DC 5:315. B 1:304.
G. LATIFOLIA K 5:36. Cur 1:139 as glutinosa. P 1:89—"one of the very best species of its genus;" Mig, Rosa (k).
G. NANA Nutt, Am phil sc tr ns, 7:314. B 1:304.
G. OXYLEPIS P 4:42.
G. PTATYLEPIS P 3:297.
G. MACROPHYLLA P 3:297.
G. ROBUSTA Nutt, Am phil sc tr 7:314. Ab 393. Da 8. B 1:304. Greene, Cal. ab B 2:400 Cruz. A 1:339d.
G. RUBRICAULIS DC 5:316. B 1:303 as hirsutula.
G. SQUARROSA Dunal. Mem Mus Par 5:50. P 3:103. Cuyamaca! Tex, Mont, Minn.
G. STRICTA DC 7:278. B 1:304 as integrifolia.
G. SUBALPINA P 3:297.
G. SUBINCISA P 4:154.
G. STYLOSA P 4:51 as
GEUVELIA DC 10:119 (1846). = Pectocarya fide IK.
G. PUSILLA DC 10:119. B 2:470 as P: p.
GUEMBELLIA = Grimmia.
G. CALYPTRATA Muell, Muse Frond 1: 775. B 2:380 as Grim: c.
GUEPONIA Bast, Fl Maine-et-Loire, suppl 35 (1812). = Teesdalla fide IK.
G. PALMICEPS M 1:20.
GUSSONEA J & C Presl, Rel Haenk 1: 183 t 33 (1828). = Fimbristylis fide IK.
G. CYPEROIDES Presl, lc. B 2:223. = F: c fide IK.
GUTIERREZIA Lag, gen et sp nov 30 (1816).
G. CALIFORNIA T & G, Fl 2:193. P 4: 58. B 1:302 as Euthamia.
Hagenbuck Er 4:39. Yerba de la Pasma. Made into tea; valuable in chills and fever, and to purify the blood.
G. DIVARICATA T & G, Fl 2:193. B 1: 302 as Euthamia.
G. DIVERGENS P 4:58 Ab 394. A 1: 339d. SD'
G. DIVERSIFOLIA P 4:53.
G. EUTHAMIAE T & G Fl 2:193. B 1: 302. P 1:203, Cedros, as Sarothrae (based on Solidago Sarothrae. Pursh, Fl 2:540).
Variety **MICROCEPHALA** Da 8.
G. FASCICULATA P 4:56. Colo.
G. FILIFOLIA P 4:55. NM.
G. GLOMERELLA P 4:54. NM.
G. JUNCSEA P 4:56. Oklahoma.
G. LEPIDOTA P 4:57. Colo.
G. LINEARIFOLIA Lag. B 1:302. Da 8. P 4:58.
G. LONGIFOLIA P 4:54. NM.
G. LUCIDA P 4:55.
G. MICROCEPHALA G, Pl Fendl 74, adnot. B 1:302. P 4:54, 55. = Euthamia fide IK.
G. MICROPHYLLA Durand & Hilg, Phil ac J 3:40 (error for microcephala). B 1:302 as Euthamia.
G. SEROTINA P 4:57. Ar.
G. SPHAEROCEPHALA G, Pl Fendl 73. P 4:57.
G. TENUIS P 4:55. NM.
G. SAROTHRAE Britton in litt ex P 1:203, based on "Solidago Sarothrae Pursh, Fl ii 540:—Brachyris Euthamiae, Nutt, Gen ii 163.—Gutierrezia Euthamiae, T & G, Fl ii 193." Cedros.
GYMNADENIA R Br, Ait Hort Kew ed 2, 5:191 (1813). = Habenaria fide IK.
G. LONGISPICUA Durand, Phil ac J ser 2, 3:101 (1855). B 2:134 as H: unalaschensis. = Herminium congestum fide IK.
GYMNANDRA Poll, Reise 3:710 (1776). = Lagotis fide IK.
G. BULLII M 1:4 as
G. RUBRA Dougl, in Hook Fl 2:103. B 1:571 as Synthyris rubra.
GYMNOLOMA HBK, nov Gen et sp 4: 217 t 373, 374 (1820).
G. ENCELIOIDES G 19:4.
G. MULTIFLOEA B & H, ex Hemsl, biol Centr Am bot 2:162. Da 9, Er 6:1, LA Co.
Genus **GYMNOPTERIS** Bernh.
GYMNOPTERIS TRIANGULARIS Und. Gymnogramme triangularis Kaulf. Arizona; British Columbia to Mexico.
GYMNOSPERMA Less, Syn Comp 194 (1832).
G. COBYMBOSUM DC 5:312. Mex. P 4: 54.
GYMNOSTERIS.
G. NUDICAULIS.
G. PARVULA M 1:3 (Gilia parvula Rydb).

G. FULCHELLA P 3:304.
GYNERIUM Humb & Donpl, Fl Aequin 2:112 t 115 (1809).

G. ARGENTUM Nees, Agrost Bras 462. Brazil. Ab 44. Pampas grass, cult.
GYMNOSTICHUM Schreb.

G. CALIFORNICUM Bolander, Cat 35 no d B 2:327. SF.

GYMNOSTOMUM Hedw.

G. CALCAREUM Ness & Harnsch. B 2: 360.

Variety **PERPUSILLUM** Sulliv. B 2:360.

G. CURVIOSTRUM Hedw. B 2:360.

G. HEIMII Hedw. B 2:361 as Pottia H.

G. LAPPONICUM Hedw. B 2:376 as Zygodon lapponicus.

G. MINUTULUM Schwaegr, Suppl 1:25 t 9. B 2:361 as Pottia m.

G. OVATUM Hedw. B 2:361 as Pottia cavifolia.

G. PLATYPHYLLUM Z 1:94.

G. PYRIFORME Hedw, Engl, Bot t 413. B 2:387 as Physcomitrum p.

G. TRUNCATUM Hedw, Musc Frond 1: 13 t 5. B 2:361 as Pottia t.

GYROSTACHYS Pers, Syn 2:511 (1807).

Sts erect, leafy, from a cluster of tuberous rts; fls in a twisted spike, w; spurless: sep and pet nar, erect or more or less connivent; lip oblg, sessile or nearly so, the base embracing the column, with a callous protuberance on each side, the dilated summit spreading and com entire: column very sh, oblique, terminating in a sh terete spike: stg ovate, with an acuminate bifid beak: anth sessile or nearly so at the base of the stipe behind, acuminate: pollen-mosses 2, thin and powdery. = *Spiranthes* fide IK.

G. SIMPLEX O K (2) 664. M 1:128 as *Ibidium* Beckii.

G. GEMMIPARA Jepson, Er 1:13.

G. BREVIFOLIA O K (2) 664. M 1:128 as *Ibidium* longilabris.

G. LACINIATA Small, Fl SEUS 318. M 1:128 as *Ibidium* l.

G. ODORATA OK (2) 664. M 1:128 as *Ibidium* o.

G. PARVIFLORA Small, Fl SEUS 318. M 1:128 as *Ibidium* ovalis.

G. PERUVIANA OK (2) 663. M 1:129 as *Ibidium* tortilis.

G. PRAECOX OK (2) 663. M 1:129 as *Ibidium* p.

G. ROMANZOFFIANA MacMillan, Metasp Minn Val 171 (1892). Cov 201. Ab 95. M 1:128 as *Ibidium* R.

Sts rather stout, glab, 1-5 dm hi, bracteate above; lvs oblg-lanceolate to linear; spk dense 3-ranked, conspicuously bracteate; sep and pet connivent; lip recurved, ovate-oblg, summit wavy-crenulate; callosities smooth, sometimes obscure; the oblg-linear gland and slender bifid beak 1.5 mm lg; cap oblg, 6-12 mm lg.

Spiranthes Romanzoffiana Cham, Linnaea 3:32 (1828).

Type locality: "in alveo turfoso convallium inflorum Unalasciae passim."

G. TRILOBA Small, Torr cl b 25:609. M 1:128 as *Ibidium* odoratum.

Genus HABENARIA Willd.

Willd, sp pl 4:44 (1805).

H. BLEPHARIGLOTTIS T, Comp 317. M 1:127 as *Blephariglottis* alba.

H. CILIARIS R Br. in Ait Hort Kew ed 2, 5:194.

Variety **ALBA**, Morong, Torr cl b 20:38. M 1:127 as *Blephariglottis* alba. Wat

HABENARIA COOPERI S. Watson. 12:276. B 2:135.

H. DILATATA Wat, bot king 340. B 2: 134 as *lucostachys*.

H. BENRIA ELEGANS Bolander.

Cat 29. B 2:133. Er 1:13 Greene, Cal ac b 2:413 Cruz. Br, 1:217 Rosa. Par 390 t.

Spike dense, sepals and petals equal.

H. FLAGELLANS Wat, B 2:483. Plumas Co, Cal.

H. FOETIDA Wat, bot king 341. B 2: 134 as *unalaschensis*.

H. GRACILIS Wat 12:276; B 2:135; Ore; Wash.

H. HYPERBOREA R Br, in Ait Hort Kew ed 2, 5:193. B 2:134. Eu, Nev.

HABERNARIA LEUCOSTACHYS S. W. Wat, B 2:134, Da 17, 2:4, 166, 374. Par 98 t.

Stout: fls many, w; capsule sessile: spur 8-12 mm long, slender: lip narrow.

H. MACROPHYLLA Goldie, Edinb Phil J 6:331. M 1:27 as *Lysias* m.

H. PEDICELLATA Wat 12:276. B 2:134, Shasta mts.

H. SCHISMAREFFIANA Cham in Linnaea 3:32. B 2:134 as *unalaschensis*.

H. SPARSIFLORA Wat 12:276. B 2:134.

H. THURBERI G 7:389, Ar. B 2:134 as *sparsiflora* (as to var: G).

HABENARIA UNALASCHENSIS S. Watson.

B 2:133. Da 17. Of recent authors (not Spreng) = *Piperia lancifolia* Rydb (fide Ab 94).

Spike less dense: bracts ovate.

HALENIA Borkh in Roem Arch 1 (1): 25 (1796).

H. BRENTONIANA Griseb, Gen et sp Gent 325;—Hook Fl 2:68. M 1:2 as *Tetragonanthus Brentonianus* = *deflexa* fide IK.

H. HETERANTHA Griseb, Gen et sp Gen 325. Hook, Fl 2:68. M 1:2 as *Tetragonanthus* h (= *deflexa* fide IK).

H. DEFLEXA Griseb, Gen et sp Gen 324.

HALEBPESTES P 4:207.

H. CYMBALARIA P 4:208 (*Ranunculus cymbalaria* Pursh Fl 2:392). Vide *Oxygraphis*.

H. SALSUGINOSA P 4:208 (*Ranunculus salsuginosus* Pallas).

H. TRIDENTATA P 4:208 (*Ranunculus tridentatus* HBK, DC syst 1:252). Mex.

HOLOSTACHYS C A Meyer, in soc nat Mosc b (1838) 361.

H. OCCIDENTALIS Wat, bot king 293. B 2:58 as *Spirostachys* o.

HAEBUEIA Seem in Bonplandia 6:293 (1858).

H. MEXICANA Seem lc Mex.

H. PARVIFLOEA Smith. Z 1:63, Guat.

Genus HARFORDIA Parry.

HARFORDIA FRUTICOSA Greene. ex Parry, Dav ac pr 5:28. P 1:206 Cedros. *Pterostegia fruticosa* Greene, Cal ac b 1:212.

HARFORDIA MACROPTERA Parry.

Genus HARPAECARPUS Nuttall.

Sm slender viscid-glandular sweet

scented ann, with entire nar mostly alt lvs, and num pedicellate sm few-fld hds: ray-fls fertile, 4-8, minute: disk fls 1-4; bracts of receptacle united and forming a cup which enclosed the disk fls, receptacle otherwise naked: ak slender, compressed or obcompressed: pap 0. **H. EXIGUUS** G, bot Mex bound 101. Ab 423. B 1:360 as *Madia filipes*.

Slender, 8-15 cm hi, hirsute, glandular above, paniculately branched; the sm hds on lg filiform naked ped; lvs linear, alt: inv bracts 5-8, lunate, almost destitute of free tips, hispid-glandular; cup of receptacle prismatic and very nar, enclosing a single straight so, tipped with an inflexed apiculation, ak; ray-ak obovate-lunate, pointed by a sm disk.

H. MADARIOIDES Nutt. B 1:360 as *Madia filipes*. (Of Durand, B 1:361 as *Hemizonella Durandi*.)

H. MINIMA Greene. Ab 423. Based on *Hemizonia minima* G. *Hemizonella minima* B 1:361.

An i or 2 hi: lvs $\frac{1}{2}$ ' lg or less; uppermost equalling or barely surpassing the sh-ped or almost sessile hds: ak obovate, obcompressed, glab or nearly so, tipped with an inflexed spiculation, not beaked.

Genus **HARPAGONELLA** A. Gray.

G 11:88 (1876).

HARPAGONELLA PALMERI A. Gray.

G 11:88. B 1:532, 2:470.

HARTMANNIA DC 5:693 (1836). = *Hemizonia fide* IK.

H. CILIATA DC 5:694. B 1:370 as *Layia chrysanthemoides*.

H. CORYMBOEA DC 5:694. B 1:362 as *Hemizonia c.*

H. FASCICULATA D C 5:693. B 1:362 as *Hemizonia f.*

H. GLOMERATA Nutt, Am phil sc tr ns, 7:391. B 1:362 as *Hemizonia fasciculata*.

H. PUNGENS H & A; Hook Ic pl t 334. B 2:363 as *Hemizonia p.*

HASTINGSIA Wat 14:217, 242 (1879).

H. ALBA Wat 14:242. B 2:159.

H. BRacteosa Wat 20:377.

Genus **HASSEANTHUS** Rose.

A 1:90 fdr.

HASSEANTHUS BLOCHMANAE.

Rose, NY bot gard b 3:37, based on *Sedum Blochmanae* Eastw, Cal ac pr, sr 2, 6:422 t 53 (1896).

Santa Barbara Co., Cal.

A 1:90.

HASSEANTHUS ELONGATUS.

Ab 184. A 1:91 fdr.

HASSEANTHUS MULTICAULIS.

Rose. Ab 185. A 1:91 fdr.

HASSEANTHUS VARIEGATUS.

Rose, NY bot gard b 3:37, based on *Sedum variegatum* S. Wats, Am ac pr 11: 137 (1875).

A 1:91.

esams, San Diego, California.

HAUYA (Moc & Sesse) ex DC mem Onagr 2 t 1 (1828).

H. ARBOREA K, Cal ac b 1:137 based on *Oenothera arborea*. P 1:202 Cedros.

H. CALIFORNICA Wat 20:366. Cedros.

Genus **KAZARDIA** Greene.

Low shrubs or suffrutescent plants,

with subcoriaceous more or less persistent toothed or serrate lvs, and spicate or somewhat thyrsoidly congested hds. Inv oblq or obconic, lvs num bracts in many sr, oft with squarrose-spreading tips: hds 20-40-fld: rays y or 0: disk cor nar, merely 5-toothed, y, changing to r or brown: sty-tips linear-subulate: ak fusiform, slightly compressed, few-nerved: pap rish. P 1:28.

H. BERBERIDIS Greene, Er 2:112, based on *Aplopappus b.* G, Syn Fl 126 (1884); *Aster berberidts* OK 318 (1891). Baja!

H. CANA P 1:29, based on *Diplostephium canum* G.

H. CRUENTA Greene, Er 2:112 based on *Aplopappus cruentus* Greene (see A 1:57 fdr).

H. DETONSA Greene, P 1:29, based on *Corethrogyne detonsa* Greene; Cal ac b 2:401, Cruz. See *Diplostephium canum* G.

H. ORCUTTII Greene, Er 2:112 based on *Aplopappus Orcuttii* G.

H. SERRATA Greene, P 1:30, Cruz; Cal ac b 2:401. See *Diplostephium canum* G.

H. SQUARROSA Greene, Er 2:112. A 1:194 d. Ab 400.

Aplopappus squarrosus H-A Bot Beech 146 (1833).

Pyrrocoma grindelioides DC prodr 5:350 (1836).

Aster grindelioides OK Rev Gen 318 (1891).

Monterey, Cal. to Baja Calif.

McClatchie *Erythraea* 2:124 Cat.

H. WHITNEYI P 3:43.

HEDERA Pers Syn 2:131 (1807).

H. BLEPHARODONTA P 3:339.

H. DIFFUSA P 3:338.

H. MANA P 3:309.

H. OBLONGIFOLIA M 1:4.

H. PURPUREA K 5:52.

B 1:595 as *Micromeria purpurea*.

H. SERPYLLOIDES T, Pac Ry R 4:123.

B 1:598 as *Pogogyne s.*

HEDERA

Tourn ex L. Gen ed 1, 56 (1737).

HEDERA HELIX Linn.

L, sp pl 202. Da 7. Eu.

HEDYSARUM (Tourn) L, syst ed 1 (1735).

H. SOREALE Nutt, Gen 2:110. Parry, Wyo. 7, 10.

H. GARNOSULUM P 3:212.

H. LEUCENTHUM P 3:213.

H. MACKENZII Rich, in Frank Narr 1st J 745. Parry, Wyo 6.

H. MARGINATUM P 4:138.

H. OCCIDENTALE P 3:19.

HELEASTHEM DC, 5:263 (1836). P 3: 49. = *Aster fide* IK.

H. CHAPMANII P 3:49, Fla. A: *Eryngifolius* T & G.

H. ALBUM DC 5:264. =A: *ptormicoides fide* IK.

H. PALUDOSUM DC 5:264. P 3:50. Fla. =A: *paludosus fide* IK.

H. SPINULOSUM P 3:50. Fla, *Aster spinulosus* Chapin Fl 193.

Genus **HELENIUM** Linnaeus.

Erect per resinous-dotted herbs, with alt lvs sessile except the lowest and oft decurrent on the st: hds solitary or

corymbose, borne on lg naked peds: fls y, those of ray several com sm and drooping, those of disk num, minute, oft brownish: bracts of the inv linear, reflexed: receptacle globose or hemispheric, naked: ak turbinate, ribbed com more or less pubescent: pap of 5-12 thin or hyaline paleae.

H. AUTUMNALE L, sp pl 886. B 1:393.
H. BADIUM P 5:55.

H. BIGELOVII G, Pac Ry R 4:107. B 1:393. Z 2:16. Ho 128. Sneezeweed. = *Heleniastrum Bigelovii*.
Lake Co to SD Co.

H. BOLANDERI G, 7:358. B 1:392.
H. HOOPESII G, Phil ac pr 1863: 65. B 1:392.

H. LACINIATUM G 9:203. B 1:393.
H. LANATUM Spreng, syst 3:574. B 1:381 as *Bahia lanata* D C (= *Eriophyllum calpitosum*).

H. MEXICANUM G, Pac Ry R 4:104. B 1:393 as *puberulum*?

HELEIUM PUBERULUM DC.

Heleniastrum puberulum OK. This plant is common along water courses from San Francisco southward to Santo Tomas, Baja California. Bancroft says this plant is used by the Indians in the same way as we make use of sarsaparilla. Mrs. Bingham (l. c.) says it is "used as a tonic and antiscorbutic, and also in the form of a powder for catarrh." She gives the vernacular name as sneezewood. It is known to the Mexicans as rosea or rosilla (the proper spelling of the word) who inform me that the seed is the part mainly used medicinally.

HELIANTHELLA T & G. Fl 2:333 (1841).

H. CALIFORNICA G, Pac Ry R 4:103. B 1:352. Z 2:75, 358.

H. LANCEOLATA T & G Fl 2:334. B 1:352. = *uniflora* fide IK.

H. MULTICAULIS Eaton, bot king 170. B 1:352 as *Parryi* var: m = *uniflora* fide IK.

H. PARRYI G, Phil ac pr 1863:65. B 1:352.

H. UNIFLORA G, Phil ac pr 1863:65. B 1:352.

H. NEVADENSIS Greene, Cal ac b 1:89. = *Californica* fide IK.

HELIANTHEMUM Tournefort ex Hall Enum Stirp 1:358 (1742). A 1:162 d.

H. ALDERSONII Greene. A 1:21 fdr. Ab 253.

H. GREENEI Rob. A 1:162 n.

H. OCCIDENTALE Greene, Cal. ac b 2:144, 391, Cruz. A 1:162 as *H. Greenei* Rob.

H. SCOPARIUM Nutt, T & G Fl 1:152. A 20 d. Ab 253. Br 1:207, Rosa. Da 2. B 1:54. Greene, Cal ac b 2:391, Cruz.

HELIANTHUS L. A 1:184d.

H. ANNUUS L, sp pl 904. B 1:351. Do 9. Ab 415. Par 190. Greene, Cal ac b 2:495 Cruz. A 1:184d.

H. BOLANDERI G 6:544. B 1:353. = *scaberrimus* fide IK.

H? ARISTOTUS Ell Sk 2:428. M 1:8 as *Verbesina aristata*.

H. CALIFORNICUS DC 5:589. Par 192. B 1:353. A 1:102.

H. DEALBATUS G, Syn Fl 1 (2):280 Br, 2:173 et. A 1:184 as *niveus*.

H. EXILIS G 6:545. B 1:353. 2:456.

H. GIGANTEUS Cav Ic 3:10 t 219. Variety *INSULUS* K 5:17. Cur 1:139 et. B 1:354 as *Californicus* DC.

H. GRACILENTUS G 11:77. B 1:616. A 1:102.

H. HOOKERIANUS DC 5:590. B 1:350 as *Wyethia angustifolia*.

H. INVENUSTUS P 1:284. Mts Kern Co. H. *LAEVIS* L, sp pl 906. P 4:263 as

H. LENTICULARIS Dougl, bot reg t 1265. B 1:353 as *annuus*. Br Colo 229, 231.

H. LONGIFOLIUS Hook Fl 1:313. B 1:350 as *Wyethia angustifolia*.

H. NIVEUS Br 2:173 (*Encelia nivea* Bth, bot sulph). A 1:184.

H. NUTTALLII T & G Fl 2:324. B 1:354. **HELIANTHUS OLIVERI** A. Gray.

G. 20:299. Ab 415. Da 9. A 1:61d.

H. PARISHII G, 19:7. Ab 415. A 1:185d.

H. PETIOLARIS Nutt, Phil ac J 2:115 (1821). Cov 131. B 1:353. Br, Colo 229, 231. A 1:102.

H. TEPHRODES G, bot Mex bound 90. B 1:354 as *Vigulera nivea*. = *Vigulera* t fide IK.

HELIOPSIS Pers Syn 2:473 (1807).

H. BALSAMORHIZA Hook Fl 1:310. B 1:348 as *Balsamorhiza Hookeri* (B: terebinthaceae fide IK).

H. TEREBINTHACEA Hook, Fl 1:310. B 1:348 as *Balsamorhiza Hookeri* (B: t fide IK).

(Tourn) L, syst ed 1 (1735).

Genus HELIOTROPIUM Tournefort.

Herbs or shrubs with alt entire petioled lvs, and sm blue or w fls in scorpioid spk or scattered: ex-lobes lanceolate or linear: cor salver-shaped or funneliform, naked in throat: sta included: fil sh or o: sty terminal, sh or slender: stig conic or angular: fr 2-4-lobed, separating into 4 1-seeded nutlets or into 2 2-seeded carpels. Heliotrope.

HELIOTROPIUM CALIFORNICUM A 1:13. = *convolvulaceum* fide IK.

H. CONVOLVULACEUM G, mem Am ac 6:403. B 1:521.

HELIOTROPIUM CURASSAVICUM Lin. L, sp pl 130. Ab 329. Par 40. P 1:268

Cedros. P 1:91 Mig. B 1:521. Da 12. Greene, Cal ac b 2:407 Cruz. A 1:205d.

Hagenbuck. Erythraea 4:39. Plant dried and reduced to powder, held in great esteem by Mexicans as a cure for wounds.

H. INUNDATUM Sw, Prod Veg Ind Occ 40. B 1:521.

H. OCULATUM M 1:58.

H. PERUVIANUM L, sp pl ed 2, 187. B 1:521.

HELOGYNE Nutt, Am phil sc tr ns, 7:449 (1841). [not Bth.]

H. APALOIDEA Nutt, lc. Peru.

H. FASCICULATA Bth bot sulph 20 t 14. B 1:299 as *Hofmeisteria* f.

HELOTIAS L. Diss Chen 17 (1751).

H. PANICULATUS Nutt, Phil ac J 7:57.

B 2:184 as *Zyadenus* p.
H. TENAX Pursh Fl 1:243. B 2:185 as *Xerophyllum* t (X: *asphodeloides* fide IK).

HELOSCIADIUM Koch in Nov act nat cur 12 (1): 125. = *Apium* fide IK.

H. ? CALIFORNICUM H & A, bot Beech 142. B 1:260 as *Berula angustifolia*. P 1:272 as *Cicuta Californica*. = *Oenanthe sarmentosa* fide IK.

H. LEPTOPHYLLUM DC, mem Sc Phys Genev 4:493. A: 1 fide IK.

Variety **LATIFOLIUM** H & A, bot Beech 347. B 1:259 as *Apiastrum angustifolium*.

Genus **HEMICARPHA** Nees.

Nees & Arn in Edinb N Phil J 17:263 (1834). = *Scripus* fide IK.

H. OCCIDENTALIS G 7:391. B 2:220. Parish, Er 3:59, Sber mts.

HEMICARPHA SUBSQUARROSA Nees. Nees in Mart Fl Bras 2 (1):61. B 2:220. = *S: micranthus* fide IK.

HEMIPTILUM G, bot Mex bound 105 (1858). = *Stephanomeria* fide IK.

H. BIGELOVII G, lc. B 1:428 as *S: exiguua*.

H. SCHOTTII G, lc. B 1:428 as *S. S.*

HEMITOMES G, Pac Ry R 6:80 t 12 (1855). = *Newberrya* fide IK.

H. CONGESTUM G, lc 81. B 1:464 as *N: c.*

HEMIZONELLA G, 9:189.

H. DURANDI G 9:189. B 1:360. Z 2:163.

H. MINIMA G 9:189. B 1:361. 2:457. Ha 128. Parish, Er 6:92, Mt Wilson near Pasadena (McClatchie).

H. PARVULA G 9:189. B 1:30. = *Durandi* fide IK.

Genus **HEMIZONIA** De Candolle.

HEMIZONIA DC Prod 5:692 (1836).

H. ANGUSTIFOLIA Bth, Pl Hartw 318 = *corymbosa* fide B 1:362.

H. ANGUSTIFOLIA DC Prod 5:692. B 1:362.

H. ANGUSTIFOLIA Durand, Pac Ry R 3:10 = *mollis* fide B 1:365.

H. BALSAMIFERA K 2:64. = *corymbosa* fide Cur 1:140, et B 1:362.

H. CLEMENTINA, Br, Er 7:70. A 1:63 fdr.

H. CLEVELANDI Greene, Torr cl b 9:109.

H. CONGESTA DC Prod 5:692. B 1:364.

H. CONGESTA G, Pac Ry R 4:109 = *Lagophylla C.*

H. CORYMBOSA T & G, Fl 2:398. B 1:362.

H. DECUMBENS Nutt, Phil ac J, n sr, 1:175 (1847). = *angustifolia* DC, fide B 1:362.

H. DOUGLASII G, B 1:366.

H. DURANDII G 6:549. = *Hemizonella Durandi* fide B 1:361.

H. FASCICULATA T & G Fl 2:397. P 1:90, Mig; 205, Cedros; Cal ac b 2:403, Cruz, Br 1:212, Rosa. A 1:193 as *Delnandra f.* B 1:362. Z 2:337, 358.

Monterey—Las Huevitas, Baja (Br); Cruz; Rosa; Tarweed.

Variety **RAMOSISSIMA**. Da 9.

Sber; SD Co; Monterey.

H. FILIPES H & A bot Beech 356 = *Lagophylla filipes* fide B 1:367 (apparently").

H. FITCHII G, Pac Ry R 4:109. B 1:363. Parish, Z 1:59. Mohave; in wheat fields,

Sacramento valley.

H. FLORIBUNDA G 11:79. B 1:616.

SD Co! Potero! Baja!

H. FREMONTII G 9:191. B 1:365. 2:457. = *multiglandulosa* fide IK.

H. FRUTESCENS G 11:79. B 1:361.

H. GLOMERATA G, syn Fl 1 (2):309. = *fasciculata* fide IK.

H. HEERMANNI Greene, Torr cl b 9:15. SD Co (Cleveland)—SBar Co.

H. HISPIDA Greene, Torr cl b 9:63. = *Douglasii* fide IK.

H. KELLOGGII Greene, Torr cl b 10:41.

H. LOBBII Greene, Torr cl b 9:109. = *fasciculata* fide IK.

H. LUZULAEOFOLIA DC Prod 5:892. B 1:364. Par 192 t.

Variety **FRAGARIA** K 2:69. Cur 1:140.

H. MACRADENIA DC Prod 5:693. B 1:363.

H. MACROCEPHALA Nutt, Phil ac J, n sr, 1:175. B 1:362 as *corymbosa*.

H. MINIMA G 6:549. B 1:361 as *Hemizonella minima* G.

H. MOLLIS G, B 1:365. 2:457.

H. MULTICAULIS H & A, bot Beech 355. B 1:362 as *angustifolia*.

H. MULTIGLANDULOSA G, B 1:366.

H. OPPOSITIFOLIA Greene, Torr cl b 9:110 = *multiglandulosa* fide IK.

H. PANICULATA G 19:17. Br 1:212, Rosa.

SBar—SD Co; Rosa.

H. PARRYI Greene, Torr cl b 9:16. Da 9. Lake Co—Sber Co.

Lake Co—Sber (Parry, Parish).

H. PARVIFOLIA Greene, Torr cl b 9:16. = *Heermanni* fide IK.

H. PARVULA G 6:549. B 1:360. = *Hemizonella Durandi* fide IK.

H. PAUCIFLORA G, B 1:365. Jepson, Er 1:14.

H. PLUMOSA G 9:192. B 1:366. 2:457. = *Blepharizonia* p, fide IK.

H. PUNGENS T & G Fl 2:399. B 1:363. Da 9.

H. RAMOSISSIMA Bth, Bot Sulph 30. B 1:362. Da 9. = *fasciculata* fide IK.

H. RUDIS Bth, Bot Sulph 31. B 1:364 as *luzulaefolia*.

H. SCAEBELLA Drew. A 1:193 fdr.

H. SERICEA H & A, bot Beech 356. B 1:364 as *luzulaefolia*.

H. SPICATA Greene, Torr cl b 9:16. = *Douglasii* fide IK.

H. STREETSII G 12:162. P 1:265, San Benito Isl. (A 1:63 as in part *clementina*).

H. TENELLA G 9:191. B 1:364. Da 9. A 1:193 as *Calycadenia t.*

H. TRUNCATA G, B 1:365.

H. VIRGATA G, bot Mex bound 100. B 1:363. Da 9.

H. WHEELERI G, B 1:617.

H. WRIGHTII G, 19:17. Ha 128. Tarweed. Sber. Baja!

Sber (W. G. Wright). Baja!

HERACLEUM L, syst ed 1 (1735).

H. LANATUM Michx, Fl 1:166. B 1:271. Ha 98. P 3:76, 84.

H. PARISHII Da 10.

HERMIDIUM Wat, bot king 286 t 32 (1871).

H. ALPES Wat lc. B 2:6.

HERPESTIS Baertn f Fruct 3:186 t 214 (1805).

H. EXILIS Br. Baja.

H. PILOSA Bth, in Hook Comp bot mag 2:57 (1836). B 1:569 as Mimulus p.
H. ROTUNDIFOLIA Pursh Fl 2:418. B 2:474.

HESPERASTRAGALUS.

H. DISPERMUS M 1:137.

HESPERELAEA G 11:83 (1876).

H. PALMERI G, lc. B 1:471.

HESPERALCEA Greene (Sidalcea section Aesperalcea G.).

HESPERIS L, syst ed 1 (1735).

H. MENZIESII Hook Fl 1:60. B 1:35 as Cheiranthus M.

H. PALLASII P 3:137.

Genus HESPEROCALLIS A. Gray.

G 7:390 (1868).

HESPEROCALLIS UNULATA A. Gray.

G 7:391. B 2:158. CD! Mohave. Baja!

Genus HESPEROCHIRON S. Watson.

HESPEROCHIRON Wat, bot king 281 t 30 (1871). =Capnorea.

H. CILIATUS P 1:285. 5:44 as Cap: c.

H. CALIFORNICUS Wat, bot king 281 t 30. B 1:516. 2:468. P 5:44 as Cap: Watsoniana.

H. LATIFOLIUS K 5:44. Cur 1:143 as Californicus. P 5:46 sub Cap: strigosa.

HESPEROCHIRON NANUS Greene.

H. PUMILUS Porter, in Hayden Ged R (1872) 768. B 1:517. P 5:52 sub Cap: hirtella.

Genus HESPEROCNIDE Torrey.

T, Pac Ry R 4:139 (1856). A 1:222. 224d.

HESPEROCNIDE TENELLA Torr.

Pac Ry R 4:139. Ab 108. B 2:63. A 1:224d.

HESPEROMECON Greene, P 5:146.

H. AFFINE P 5:146. 147.

H. ANGUSTUM P 5:146. 149.

H. LINEARE P 5:146.

H. LUTEOLUM P 5:146. 150.

H. PLATYSTEMON P 5:146. 148.

H. PULCHELLUM P 5:146. 150.

H. STRICTUM P 5:146. 149.

HESPEROSCORDIUM.

H. MARITIMUM T, Pac Ry R 4:148. B

1:152 as Muilla m.

HESPEROSCORDUM Lindl, bot reg

sub t 1293. =Brodiaea.

H. HYACINTHINUM Lindl, lc. B 1:156

as B: lactea.

H. LACTEUM Lindl, lc, t 1639. B 1:156

as B: l.

H. LEWISII Hook Fl 2:185 t 198. B 1:

156 as B: lactea.

Genus HESPEROYUCCA Baker.

B 2:164.

Subcaulescent, with a sh, stout, woody caudex and straight needle-pointed rough-margined flat lvs and ample panicle: perianth broadly campanulate, of subequal distinct broadly lanceolate concave seg: fil evidently adnate to perianth below, clavate, suberect; anth didymously cordate: ova oblg-ovoid or obovoid, mostly lg'er than the sh, slender sty stig capitate, lg-papillate, minutely perforate: fr capsular incompletely 6-celled, 3-valved thru the laciniate false septa: sds thin, flat. Spanish Bayonet.

H. WHIPPLEI Baker. Ab 92. Par 74.

Simple or sometimes caespitose: lvs ascending, rigid, 3-10 dm lg, about 15 mm wide, plano-convex subtriquetrous

or keeled on both faces, sometimes falcate striate glau, keenly but finely denticulate, with very fine slender pungent end spine; panicle 2-5 m hl, lg peduncled, glab; fls creamy-w, pendent, fragrant, cap about 5 cm lg. (Yucca Whipplei T; Y. Whipplei graminifolia wood).

HETERANTHERA Ruiz & Pav, Prod 9 t 2 (1794).

H. GRAMINEA Vahl, Enum 2:45. B 2: 187 as Schollera graminifolia. T, Fl N Y 2:313 t 133.

HETEROCODON Nutt, Am Phil sc tr ns, 2. 8:255 (1843).

H. MINIMUM K 7:111. Cur 1:141 as a very reduced form of Specularia biflora. =Alchemilla arvensis fide IK.

H. BARIFLORUM Nutt, lc. Ha 123. B 1:447.

HETERODEABA Greene, Cal ac b 1:71. Type: Draba unilateralis Jones.

H. UNILATERALIS Greene, Cal ac b 1: 72, based on Draba unilateralis Jones. A 1:260 as Draba u.

HETEROGAURA Roth, in Am ac pr 6: 354 (1864).

H. CALIFORNICA Roth, lc. B 1:234. Sber.

Genus HETEROMELES J. Roemer.

A 1:319d. =Photinia fide IK.

HETEROMELES ARBUTIFOLIA Roem.

Par 92. P 1:77. 88 Mig. Br 1:209 Rosa.

Ab 197. B 1:188. Da 5. A 1:81d, 319d.

Orcutt, Am pl 1:81.

Abrams, Fl LA 197.

Brandege, Zoe 1:111. Cat.

Roem, Syn mon 3:105 (1847).

Parsons, W Fls Cal 92.

Brewer & Watson, bot Cal 1:188.

Crataegus arbutifolius Ait f Hort Kew ed 2. 3:202 (1811).

Type locality: "California."

HETEROSPERMUM Cav Ic 3:34 t 267

(1794).

H. KANTI G 5:162. B 1:357.

HETEROSTYLUS Hook Fl 2:171 t 185

(1840). =Lillaea fide IK.

H. GRAMINEUS Hook, lc. B 2:193 as L: subulata.

Genus HETEROTHECA Cass.

Cass, in sc Philan b (1817) 137.

H. FLORIBUNDA Bth, bot sulph 24. B

1:308. =grandiflora fide IK.

HETEROTHECA GRANDIFLORA Nutt.

Nutt, in Am phil sc tr, ns, 7:315. B 1:308.

Da 8. Ab 395. A 1:246d.

Neveda; SBar; Baja!

Genus HEUCHERA Linnaeus.

L, syst ed 1 (1735).

Per herbs with stout rtstocks, mostly basal lg-petioled rounded com cordate lvs, and slender scapes: inf in ours paniculate, bracteate, bearing sm mostly p fls cx campanulate or in fr somewhat urceolate, 5-lobed, lobes obtuse and sometimes unequal, tube coherent with lower half of ova: pet unguiculate, sm, entire, inserted on the throat of the cx: sta 5, exserted or included, anth 2-celled: ova and cap 1-celled, with 2 parietal placenta, more or less 2-beaked, beaks tapering into the slender sty, dehiscent between the beaks: sds num, minute, papillose.

H. BARBAROSSA Presl, Rel Haenk 2:

56. B 1:201 as *micantha*.
H. CALIFORNICA K 5:53. Cur 1:136 as probably *Tierella unifoliata* Hooker.
H. CYLINDRICA Dougl. in Hook Fl 1: 236. B 1:201. Parry, Wyo 13.

HEUCHERA ELEGANS Abrams.

"Scape 25-35 cm hi, villous-hirsute; lvs thickish, round-cordate, 1-2 cm broad, crenately lobed and toothed, the margins ciliate, otherwise glab; petioles 2-2.5 cm lg, villous; stipules scarious, the free portion narly lanceolate, 2-3 mm lg, ciliate with lg slender hairs; panicles 14-18 cm lg, villous-pubescent thruout and somewhat glandular, its branches cymose, 3 cm lg, com 9-fld, the uppermost becoming reduced; bracts subtending the branches about 4 mm lg, lacerate, those subtending the pedicels similar but somewhat reduced; cx pink, villous, 8-10 mm lg, narly campanulate, its lobes narly oblg about 3 mm lg; pet w, lanceolate-spatulate, 5-6 mm lg; nar'd below to a slender, claw; sta included. Frequent in rocky places in the higher altitudes of the chaparral belt. Mount Gleason; Mount Lowe; Mount Wilson." —Ab 191.

H. GLABRA Willd ex Roem & Schult syst 6:216. B 1:201.

H. HARTWEGII Par 60 t.

H. HIRTIFLORA T & G Fl 1:582. B 1: 201 as pilosissima.

H. HISPIDA H & A, bot Beech 347. B 1:201 as pilosissima.

H. LITHOPELLE M 1:105.

H. LONGIPETALA Moc ex Ser in DC 4:52. B 1:199 as *Tiarella unifoliata*.

H. MAXIMA Greene, Cal ac b 2:149, 397 Cruz. = pilosissima fide Br.

H. MENZIESII Hook Fl 1:237 t 80. B 1:197, as *Tolmiea* M.

H. MICRANTHA Dougl, bot reg t 1302. B 1:201.

H. PILOSISSIMA F & M, Ind Sem Hort Petrop 5:36. B 1:201, 2:445. Z 2:75, 350. Rosa.

Br 1:210, Rosa (cites *H. maxima* Greene as a synonym); "when growing amongst bushes on Cruz the flg sts reach a height of 5', on sun-exposed rocks it is oft not more than 6" hi." T, Stansb exp Utah 388. B 1:200. Da 6, Z 2:162. Ha 83.

HEUCHERA RUBESCENS Torr.

Baja mts! Sierra Nevadas, 5,000-11,000 ft; Utah; N. M.

Variety **GLANDULOSA** K 5:45. Cur 1: 136 as "scarcely differing".

HEYDERIA C Koch, Dendr 2 (2):177 (1873). = *Libocedrus*.

H. DECURRENS Koch, lc, 179. B 2:116 as L: d.

Genus HIBISCUS Linnaeus.

Stout herbs; fls showy; involucre consisting of num slender bractlets; sta column with anth scattered along the upper part but naked at the truncate 5-toothed summit; ova 5-celled with 2-many ovules in each cell; cap loculicidal. Rose-mallow.

H. CALIFORNICUS K 4:292. Cur 1:133 as ?*H. moscheutos*.

H. COULTERI G, Pl Wright 1:23. Mex. Baja.

HIBISCUS DENUDATUS Benth.

Bth, bot Sulph 7 t 3, B 1:88.

San Diego (Or).

H. MOSCHEUTOS L, sp pl 693. B 2:437. Variety **OCCIDENTALIS** T, bot Wilkes exp 256. B 1:88 as probably *Californicus*.

Genus HIERACIUM Linnaeus.

L, syst ed (1735). A 1:288d.

H. ALBIFLOREM Hook, Fl 1:298. B 1: 440. Ha 128. Cov 143.

HIERACIUM ARGUTUM Nutt.

Am phil sc tr 7:447. B 1:441 as *albi-florum*. Br 1:214 Rosa. Greene, Cal ac b 2:406, Cruz.

H. BARBIBERUM P 3:228.

H. BOLANDERII G 7:365. B 1:440.

H. BREWERI G 6:553. B 1:440. Z 2:163.

H. CALIFORNICUM Froel, in DC 7:235. B 1:434 as *Malacothrix saxatilis*.

H. GRACILE Hook Fl 1:298. B 1:441 as *triste* var. g.

H. GREENEII G 19:69. P 4:226.

H. GREENI P 4:226as

H. HOREIDUM Fries. Ha 128, Cov 143.

HIERACIUM PARISHII A. Gray.

Ab 451. A 1:288d.

Abrams, Fl LA 451. Gabriel and Sber mts. Je-Ag.

H. SCOULERI Hook Fl 1:298. B 1:440. Z 1:221. Parry, Wyo 18.

H. TRAILLII P 4:226.

H. TRISTE Willd, ex Spreng Syst 3:640. B 1:441.

Variety **DETONSUM** G, B 1:441.

Variety **GEACILE** G, B 1:441.

HIEROCHLOE S G Gmel, Fl Sibir 1: 100 (1747).

H. BOREALIS T, Pac Ry R 4:154. B 2: 265 as *macrophylla*. P 3:84.

H. MACROPHYLLA Boland, Cal agr sc tr (1864) 65. B 2:265.

HILARIA MUTICA Benth.

Cal. (Coville); N. M.; Arizona. "Black grama grass."

HILARIA RIGIDA Vasey.

Pleuraphis rigida Thurber.

"Gletta"; C D; Cantilles (Or 1145); Arizona (Or 2512).

Genus HIPPIURIS Linnaeus.

L, syst ed 1 (1735). A 1:328d.

Ovary 1-celled.

HIPPIURIS VULGARIS L.

L, sp pl 4. Eu. B 1:215. A 1:77d, 328.

Abrams, Fl LA 273.—Sber mts.

HOFMEISTERIA Walp rep 6:106 (1747).

H. FASCICULATA Walp rep 6:106. B 1: 299.

H. FLURISETA G, Pac Ry R 4:96 t 6. B 1:299.

H. FRENIFOLIA Walp rep 6:106. Cal.

HOFFMANSEGGIA MICROPHYLLA Tr.

HOFFMANSEGGIA STRICTA Benth.

HOITZIA Juss, Gen 136 (1789). = *Loeselia* fide IK.

H. SQUARROSA Esch, in Ac Petrop mem 1826. B 1:493 as *Gilia* s. DC 9:320. P 1:133 as *Nacarretia squarrosa*.

HOLLISTERIA Wat 14:296.

H. LANATA Wat 14:296. B 2:482.

Genus **HOLODISCUS** Maxim.

Maxim in Act Hort Petrop 6:253 (1879). = *Spiraea* fide IK.

Unarmed shrubs with simple toothed or lobed exstipulate decid lvs and terminal panicles of num w fls: ex deeply

5-cleft, nearly rotate; pet 5, rounded; sta 20, inserted on an annular perigynous disk; pistils 5, distinct, becoming 1-seeded hairy carpels, tardily dehiscent by dorsal suture or indehiscent.

E. ABIAEFOLIUS Par 87.

E. ARGENTEUS Maxim lc. =S: a fide IK.

HOLODISCUS DISCOLOR Maxim.

Maxim, lc B 2:443. =S: d fide IK.

Shrub 1-2 m hi: branches sh, rigid; bark grayish brown, more or less shreddy; lvs ovate, cuneately nar'd to a sh winged petiole, pinnately lobed or toothed above the middle, g and nearly glab above w'ish-tomentose beneath; panicles erect, branching; carpels hirsute.

Abrams, Fl LA 196. Gabriel mts.

Variety **DUMOSUS** Watson.

Lower and more compact: panicle sm'er unbranched.

Ab 196. Mt San Antonio.

Ha 85.

E. GLABRESCENS M 1:40.

E. SAXICOLA M 1:41.

HOLOGYMNE Bartl, Ind Sem Hort Gotting; ex Linnaea 12 (1838) Litt 18. = *Lasthenia* fide IK.

H. GLABRATA Bartl. B 1:384 as L: g.

HOMALOBUS Nutt, T & G Fl 1:353 (1840). = *Astragalus* fide IK.

H. WINGATANUS M 1:145.

H. WINGATENSIS M 1:145 as *Wingatanus*.

HOMOPAPPUS Nutt, Am phil sc tr ns, 7:330 (1841). = *Aplopappus* fide IK.

H. PANICULATUS Nutt lc 331. B 1:321 as A: p. =A: racemosus fide IK.

H. RACEMOSA Nutt lc 332. B 2:454 as A: r.

Genus **HOOKERA** Salisb.

Salisb, Parad Lond t 98 (1808). = *Brodiaea* fide IK.

Scapes erect, straight, from a fibrous coated corm, with few linear lvs and a solitary umbel subtended by several membranaceous bracts: perianth tube thick turbinate, seg = tube spreading at tip: sta 3 opp the inner seg, the outer sta being reduced to staminodia or 0.

E. CAPITATA OK. A 1:180 S.

E. CORONARIA Salisb, lc. =B: grandiflora fide IK.

HOOKERA LEPTANDRA Greene.

"Scape slender, 1° hi or less: umbels 2-fld, pedicels 1-3' lg: perianth p, 1! lg, the tube of ¼ that length, seg linear, spreading above the middle: free part of fl 3' lg or more, supporting a linear anth of equal length which is bifid at base, obtuse at apex, whole but 1" sh'er than seg: staminodia pale, thin, involute-petaloid, retuse, a trifle surpassing the anth. *Calistoga*. Cal. (Perry)." —P 1:74.

E. MINOR Britten J bot 24.

Abrams, Fl LA 87.

Brodiaea minor S. Watson.

E. ORCUTTHI Greene. A 1:365 fdr.

E. PULCHELLA M 1:132.

E. PULCHELLA Salisb lc sub t 98; t 117. =B: congesta fide IK.

HOOKERA Smith. Moss.

E. ACUTIFOLIA Hook. B 2:406.

E. ANOMALA Muell. B 2:406.

E. LUCENS Smith. B 2:406.

H. SPLACHNOIDES Schleich. B 2:386 as *Tayloria* s.

HORDEUM ADSCENDENS H B K.

-*Calamall* (Orcutt).

Genus **HORKELIA** Cham. & Sch.

C & S in Linnaea 2:26. A 1:315d. = *Potentilla* fide IK.

H. BOLANDERI G 7:338. B 1:182. P 1:103 as P: B.

H. CALIFORNICA C & S Linnaea 2:26 (1827). B 1:181. P 1:100 as P: C.

Variety **SERICEA** G A 1:315 as sp.

H. CAPITATA Lindl, bot reg t. B 1:181. (Regel. Gartenfl 1872 t 711 = *fusca* fide B 1:181).

H. CONGESTA Hook bot mag t 2880 (1829). G 6:529. B 1:181. 2:444. P 1:104 as P: C. (Newberry, Pac Ry R 6:73 = *tenuiloba* fide B 1:182.)

Variety **TENUILOBA** T, Pac Ry R 4:84.

B 1:182 as sp.

H. CUNEATA Lindl, bot reg 23: sub t 1997 (1837). T & G Fl 1:435. P 1:101 as P: Lindleyi. B 1:181.

H. FUSCA Lindl, bot reg t. B 1:181. P 1:103 as P: Douglasii.

Variety **TENELLA** Wat. B 1:181.

H. GORDONI Hook, Kew J bot 5:341 t 12 (1853). B 1:183 as *Ivesia* G. P 1:106 as P: G.

H. HIRSUTA Lindl, bot reg sub t 1997.

G as congesta.

H. KELLOGGII Greene. Cal ac b 2:416 (My 1887). P 1:101 as P: K.

H. LEPTANDRA P 1:74, *Calistoga*, Cal.

H. MULTIFOLIOLATA T, Sitg R 159. B 1:183 as *Ivesia* Gordoni.

H. PARRYI Greene, Cal ac b 2:416. P 1:102 as P: P.

H. PARVIFLORA Nutt, T & G Fl. B 1:181 as *fusca*. P 1:104 as P: Andersonii.

HORKELIA FLATYCALYX Rydb.

Abrams, Fl LA 201. Claremont.

Ab 201. A 1:315d.

HORKELIA PUBERULA Rydb.

Abrams Fl LA 201. —"Frequent in the foothills, mostly below 3000° alt.

Mr-My.

Ab 201. A 1:315d.

H. PURPURESCENS Wat 11:148. B 1:182. Rothrock, bot Wheeler exp 360 t 3.

P 1:105 as P: p.

H. SERICATA Wat 20:364. P 1:104 as P: s.

HORKELIA SERICEA Rydb.

Abrams, Fl LA 201. Port Ballena.

A 1:315d.

Horkelia Californica sericea Gray.

H. TENUILOBA G 6:529. B 1:182, 2:444. P 1:105 as P: t.

H. TILINGI Regel, Gartfl t 6 1872 t 711. B 1:182 as H; *tridentata*. P 1:105 as P: Til.

H. TRIDENTATA T, Pac Ry R 4:84 t 6 (1857). G 6:528. 530. B 1:182. P 1:105 as P: Tilingi.

Genus **HORSFODIA** Gray.

Gray 22:296. Named in honor of Frederick Hinsdale Horsford.

Upper pair of ovules abortive, or all 3 fertile: carpels 8-12, disjoined at maturity, early 2-valved above, covering upper and com empty scarious portion into a pair of erect and somewhat spreading wings, which equal or exceed

the firm reticulated basal portion. Densely and somewhat roughly stellate-tomentose shrubby or suffrutescent plants, with much the habit of *Abutilon* or *Sphaeralcea*, with carpels rather of the latter but sd of the former; lvs cordate to lanceolate and barely denticulate, thickish; the chiefly axyl ped 1-fld. **HORSFORDIA NEWBERRYI** A. Gray.

Abutilon Newberryi Wat.
Ar; CD; Sonora. Dr notes it as 8 ft hi at San Julian, Baja.

HORSFORDIA PALMERI S. Watson.
Wat 24:41. CNH 1:67 Baja.

"Santa Margarita Island, a sm tree 12 ft hi; much sm'er at Llano de Santana and San Gregorio" (Br).

H. PURISSIMA Br 2:135, San Gregorio and Purissima, Baja.

Genus **HOSACKIA** Douglas.

Dougl. ex Bth, bot reg t 1257 (1829).
H. ARGENTEA K 3:38. Cur 1:135 as *argophylla*.

H. ARGENTEA K, 3:38 = *H. argophylla* G (fide Cur 1:135).

H. ARGOPHYLLA G, Am ac mem 5:316 (1854).

Synonymy: *Lotus argophyllus* Greene.
H. ARGYRAEA Greene, Cal ac b 1:184.—

A 1:35 as *H. rigida* var. *argyrea* Wat.
H. BALSAMIFERA K, Cal ac pr 2:125.—

H. stipularis Benth (fide Cur 1:135).
H. BICOLOR Dougl., bot reg t 1257. B

1:135, 2:441. Par 170.
H. BRACHYCARPA Bth 306. B 1:137.

A 1:300 as *Lotus humistratus*.
Lotus humistratus Greene, Pittonia 2:139.

Near *Hosackia subpinnata*, distinguished by its prostrate habit, soft pubescence, subsessile fls, calyx-teeth much longer than the tube, and very north to middle Cal., east to Arizona.

H. CRASSIFOLIA Benth (fide Cur 1:135).
17:365 (1837).—Par 172.—A 1:35d.

Synonymy: *Lotus crassifolius* Greene.
H. DECUMBENS Bth, L sc tr 17:366. B

1:138.
Variety? **NEVADENSIS** Wat., B 1:138.

A 1:301 as *Lotus N.*
H. DENTICULATA Drew, Torr cl b 16;

151.—A 1:302 fdr.
Variety **ARGYREA** S. Watson.

Hosackia argyrea Greene, Cal ac f 1:
H. FLEXUOSA Greene, Cal ac b 1:82.—

P 1:202 (Cedros).
H. GLABRA T, Wilkes Exp 274.—Par

156 t.
Syrmatium glabrum Vogel.

Syrmatium glabrum Vogel.
Louts glaber Greene.

Syrmatium dendroideum Greene (fide
Zl:111).

H. GRACILIS Bth, L sc tr 17:365. B
1:135. Par 170 t.

H. GRANDIFLORA Benth (fide Cur 1:135).
17:366 (1836).—A 1:35d.—Br, 1:102

(Cruz).
Synonymy: *Lotus grandiflorus* Greene.

Hosackia ochroleuca Nutt.
Variety **ANTHYLOIDES** G.—A 1:35d.

Synonymy: *Lotus leucophaeus* Greene.
H. HAYDONI Orcutt, w 6:63 (1889).

Synonymy: *Lotus Haydoni* P:2:149.
H. HEERMANNI D & H, Pacific Ry R

5:6 t 4 (1855).

Synonymy: *Lotus Heermanni* P 2:150.
H. JUNCCEA Benth (fide Cur 1:135).

Synonymy: *Lotus juncus* P 2:148.
H. LATHYROIDES D & H, Pac Ry R 5:

6. B 1:135 as *oblongifolia* var: *angustifolia*. A 1:301 as *Lotus* 1.

H. MACROPHYLLA K, 2:123—"probably a variety of *H. stipularis* Benth (Cur 1:135).

H. MARITIMA Nutt, T & G Fl 1:226.—
Greene, Cal ac b 2:395 (Cruz).—Br 1:208

(Rosa).—P 1:263 (San Benito Isl.—P
1:288 (San Bartolome bay, Baja).

H. MICEANTHA Nutt, T & G Fl 1:324
(1838).

Synonymy: *Lotus hamatus* P 2:150.
HOSACKIA OBLONGIFOLIA Bth.

H. PARVIFLORA Benth (fide Cur 1:135).
1257.—Greene, Cal ac b 2:395 (Cruz).

HOSACKIA PROSTATA Nutt.
HOSACKIA PURSHIANA Bth.

H. RIGIDA Bth, 305 (1849).—G, Phil ac
pr, sr 2, 1:208 (Rosa).—A 1:35d.

Synonymy: *Lotus rigidus* P 2:142.
Variety **ARGYREA** Wat.—A 1:35d.

Synonymy: *Hosackia argyrea* Greene.
Lotus argyrea P 2:144.

H. STRIGOSA Nutt, T & G Fl 1:226.—
Greene, Cal ac b 2:395 (Cruz).—Br Cal ac

pr, ar 2, 1:208 (Rosa).—A 1:35d.
HOSACKIA SUBPINNATA T-G.

HULSEA T & G, Pac Ry R 6:76, 77
(1857). A 1:255 d.

H. ALGIDA G 6:547. B 1:386.
H. BEEVIFOLIA G 7:359. B 1:386.

H. CALIFORNICA G, Pac Ry R 6:77. B
1:386. Parish, Er 6:92, Smith mt, SD Co.

Baja mts! SD mts (Parry). T & G,
bot Mex bound 98.

Tall, viscid-pubescent: hds 3-7 on an
apparently naked st or ped, subtended

by ovate lanceolate bracts $\frac{1}{2}$ lg: rays y,
 $\frac{1}{2}$ lg: pap-scales rounded-cuneate, the

truncate apex denticulate: ak $\frac{1}{4}$ lg.
H. HETEROCHROMA G 7:369. B 1:386.

2:457. A 1:255 d. Ab 433. Z 2:163. Yo-
semite, SBer Co (Parish).

Hall, U 128.
Abrams, Fl LA 433. Gabriel mts, etc.

H. NANA G, Pac Ry R 6:76 t 12. B 1:
386. 2:457. Ore.

Variety **LABSENI** G, B 1:387. "With
tufted sts almost to the hd. Lassen's

Peak.
H. FARREYI G 12:59. B 2:457. = *vestita*

fide IK.
H. VESTITA G 6:547. B 1:387. 2:457.

Mohave (Parry); CD (Parish).
W-woolly when young; scapes soon

naked and glandular: lvs obovate or
spatulate, tapering into a sh petiole, en-

tire or nearly so: inv-scales linear or
lanceolate, in 2 or 3 sr: rays 20-30, y:

scales of the very silvery pap erose-
toothed, the 2 longer ones oblg and

equaling the proper cor-tube, alt ones
sh'er, broader and truncate. Mono Lake

(Brewer), 9,000° alt.
Variety **CALLICARPHA** Hall.

"El Caparossa. Stems several, from an
annual or biennial root, branching above

1½-3 ft high, woolly below, viscid hirsute
above; basal lvs numerous, clothed with

a dense tomentum, obovate, spatulate;

the rameal scattered, broadly oblong, 1-1½ in. long, passing above into bracts of the much elongated peduncles: involucre 5 lines high; rays y, the ligules 3 lines long;—otherwise as in the species."—Ha U 129. Jac; Cuyamaca.
HOULTUYNIA Thunb, Fl Jap 12 (1784).
HOULTUYNIA CALIFORNICA B. & H B & H f ex B 2:483 as *Anemopsis* C.
HOWEA BELMOREANA Becc.
 Lord Howe's Island.
HOWEA FORSTERIANA Becc.

HOWELLIA G 15:43.
H. AQUATILIS G 15:43.
H. LIMOSA P 2:81, "near Elmira, Cal."
HUGELIA Bth, Bot Reg. =Gilla.
H. DENSIFLORA Bth B 1:495 as *Gillia* d. A 1:176 as
H. ELONGATA Bth. B 1:495 as *Gillia densifolia*. A 1:176 as
H. LUTEA Bth, bot reg. B 1:495, 2:466 as *Gillia floccosa*. A 1:176 as
H. VIRGATA Bth, Hook Ic Pl t 200. B 1:495 as *Gillia* v.
HUMULUS L, syst ed 1 (1735).
H. LUPULUS L, sp pl 1028. B 2:63. Eu.
HUTCHINSIA R Br in Ait Hort Kew ed 2, 4:82 (1812).
H. CALYCINA Desv, J bot 3:168 (1814). B 1:42 as *Smelowskia* c.
H. PROCUMBENS Desv, J bot 3:168. Ab 175. A 1:118 as *Capsella divaricata*. = *Capsella procumbens* fide IK.
HYDROCOTYLE Tourn. A 1:136d.
H. AMERICANA L, Da 7. Z 2:116. A 1:137.
H. CUNEATA Coulter & Rosa. A 1:137d.
H. INTERRUPTA Muhl. A 1:137 as verticillata. T & G Fl 1:599 in part. Da 7. B 2:154. Z 2:116.
H. PROLIFERA K 1:15. Cur 1:138. A 1:137d.
H. BANUNCULOIDES L, f suppl 177. Ha 98. Da 7. B 1:254, 2:451. Ab 277. A 1:137d.
H. UMBELLATA L, sp pl 234. Ab 277. Z 2:116. A 1:137d.
H. VERTICILLATA Turcz in sc nat Mosc b 22 (2): 28. Z 2:352. A 1:137.
H. VULGARIS L, sp pl 234 Eu. B 1:254 as to Am pl as prolifera.
HYDROPHYLLUM L, syst ed 1 (1735).
H. CAPITATUM Dougl, ex Bth, L sc tr 17:273. B 1:502. Z 2:232. (T, Pac Ry R 4:125 =occidentale fide B 1:503).
H. LINEARE Pursh Fl 1:134. B 1:510 as *Phacelia* Menziesii.
H. MACROPHYLLUM Nutt, Phil ac J 7:111.
 Variety **occidentale** Wat, bot king 248 mainly, as occidentale var: Wat fide. B 1:503.
H. OCCIDENTALE G 10:314. B 1:503.
 Variety **WATSONI** G. B 1:503.
H. VIRGINICUM L, syst ed 12, 152. B 1:502.
H. MAGELLANICUM Lam, J nat hist Par 1:373 (1792). A 1:172 as *Phacelia* M.

Genus HYMENOCLEA Torrey & Gray.
 T & G, ex T, in Emory Rec 142 (1848).
HYMENOCLEA MONOGYRA T. & G.
 T & G, lc, 143, 79. B 1:344.
 Shrub 2 to 10 ft high, abundant in river bottoms near SD—sometimes called corn weed, Arizona, Texas, Mexico.

HYMENOCLEA SALSOLA T. & G.
 T & G, lc, 142, 79. B 1:344.
 Shrub, 3 or 4 ft high, abundant in the canyons on the western borders of the CD (Parish): Arizona; Nevada.
HYLOCOMIUM Schimp. =Hypnum.
H. LOREUM Schimp. B 2:421, as Hyp: 1.
H. SPLENDENS Schimp. B 2:420, as Hyp: s.
H. TRIQUETRUM Schimp. B 2:420, as Hyp: t.
HYMENOLCBUS Nutt, ex T & G Fl 1: 117 (1838) =*Capsella* fide IK.
H. DIVARICATUS Nutt, lc. A 1:108 as C: divaricata.
H. ERECTUS Nutt, lc. A 1:118 as C: divaricata.
H. PROCUMBENS Nutt, lc. =C: p fide IK.
H. PUBENS G, Pl Wright 1:9; 2:14. =C: p fide IK.
HYMENOPAPPUS L'Herit Diss (1788).
H. DOUGLASII Hook Fl 1:316. B 1:391 as *Chaenactis* D.
H. FILIFOLIUS P 4:43.
HYMENOPAPPUS FILIFOLIUS Hook.
 Hanson's SD Co mts! Mont; Neb; N. M.
H. INTEGERS P 3:249.
HYMENOPAPPUS LUGENS Greene.
 P 4:43. A 1:65 fdr.
H. LUTEUS B 1:617. P 4:43. A 1:65.
H. NEVADENSIS K 5:46. Cur 1:140 as *Chaenactis* n.
HYMENONEMA Cass, sc Philom b (1817) 34.
H. GLAUCA Hook, Fl 1:300. B 1:425 as *Microseris laciniata* var.
H. LACINIATA Hook, Fl 1:301. B 1:424 as *Microseris* l.
HYMENOTHERIX G, Pl Fendl 102.
H. WISLIZENI G, Pl Fendl 102, NM.
H. WRIGHTII G, Pl Wright 2:97. Parish, Er 3:62. NM. Baja. SD mts. Bien (fide Greene); Per (fide Alderson).
 Hanson's! Arizona.
ILMENOKYS Cass in Dict Sc nat 55: 278 (1828).
H. CALIFORNICA Hook bot mag t 3828. =*Baeria coronaria* fide IK.
H. CALVA T & G Fl 2:381. = *Baeria anthemoides* fide IK.
H. LINEARIFOLIA Hook, Ic Pl t 146. I 3:269 s. =*Actinella* l fide IK.
H. ODORATA DC in Deless lc Sel iv, t 42. P 3:273. =*Actinella* o fide IK.
H. MUTICA T & G Fl 2:280. B 1:378 as *Actinolepis* m.
Genus HYPERICUM Linnaeus.
 St. John's Wort: lvs sessile: fls cy-
 mose: sep 5, equal: pet 5, decid or mar-
 cescent: cap conical to globose or oblg.
HYPERICUM ANAGALLOIDES C.-S.
 C & S, Linnaea 3:127. Jepson, Er 1:12.
 Ha 95, B 1:81. Par 179. A 1:27d.
H. BRACTEATUM K 1:65. Cur 1:133 as
 concinnum.
H. CONCINNUM Bth 300. Par 166 t. B 1:81. 2:436. Jepson, Er 1:12.
H. FORMOSUM HBK Nov Gen et sp 5:196 t 460, Mex. B 1:81. Ha 95.
HYPERICUM SCOULEII Hook.
 Hook Fl 1:111. B 1:81. Jepson, Er 1:13.
 A 1:27d. =*Formosum* fide Hall.
HYPNUM Dill. Moss.
H. ACANTHONEURON Schwaegr suppl t 258. B 2:397 as *Mnium* Menziesii.

- H. ACUTICUSPIS** Mitten. B 2:414 Wash.
H. ADUNCUM Hedw. Musc Frond 4:62 t 24. B 2:418. SF. Nev. Eu.
H. AGGREGATUM Mitt, J Linn sc 8: 35 t 6. B 2:414. Oakland, Cal. Vancouver Isl.
H. ALLEGHANIANSE Muell. B 2:416. Vancouver Isl. Atlantic states.
H. ARCTICUM Sommerf. B 2:420. Mt Dana; Ore; Eu.
H. ARENARIUM Lesq, Am Phil sc tr 13:13. B 2:412, SF.
H. ASPERRIMUM Mitten, J Linn sc 8: 33 t 6. B 2:413.
H. BOLANDESI Lesq, Am Phil sc tr 13:12. B 2:413. Oakland.
H. BLANDOWII Web. & Mohr. B 2:411.
H. BLANDUM Hook, Engl bot suppl t 2715. B 2:415 as illecebrum.
H. BIGELOVII Sulliv, Pac Ry R 4:189 t 8. B 2:416, SF.
H. BREWERIANUM var., Sulliv & Lesq. B 2:414 as aggregatum.
H. CAESPITOSUM Wils, Engl bot suppl t 2878. B 2:414. Oakland, Eu.
H. CALIFORNICUM Lesq, Am Phil sc tr 13:13. B 2:415, SF.
H. CALYPTERATUM Sulliv, Pac Ry R 4: 190 t 10. B 2:410, LA.
H. CIRCINALE Hooker, Musc Exot t 107. B 2:420. Wash, Vancouver Isl. Siskiyou mts, Cal. On redwoods.
H. COLLINUM Schleich. B 2:412, Yosemite; Nev; Colo; Ut; Eu.
H. COLPOPHYLLUM Sulliv. B 2:416, Cal.
H. COMMUTATUM Hedw, Musc Frond 4:68 t 26. B 2:419, Mono Pass, Eu.
H. COMPACTUM Muell, Syn 2:408. B 2:417, Eu, Alk, S Am.
H. COMPRESSULUM Muell. B 2:414, Ore.
H. CONTEXTUM Hedw, spec t 69, 72. B 2:418 as serpens.
H. CRISPIFOLIUM Hook, Musc Exot t 31. B 2:410. Ore, Cal.
H. DECLIVUM Mitten, J L sc 8:33 t 6. B 2:413. Idaho.
H. DENTICULATUM L. B 2:416. Eu, Cal.
H. ELEGANS Hook. B 2:417 Eu, Cal.
H. EUGYRIUM Schimp. B 2:420. Eu, Ore.
H. EXANNULATUM Gumb. B 2:418. Eu, Cal.
 Variety **COCELEAE** Austin, bot gaz 2: 143. B 2:419.
H. FERTILE Sendt. B 2:419. Eu, Cal.
H. FILICINUM L. B 2:419. Eu, Wash, Colo, Eu.
H. FLUITANS L. B 2:419, Eu, Ore, S Am.
H. HILLEBRANDI Lesq, Cal ac mem 1:33. B 2:413.
H. ILLECEBRUM Schwaegr. B 2:414. SF. Eu.
H. LAETUM Bridel, Sulliv Ic Musc 185 t 115. B 2:412. Yosemite, Eu.
H. LAXIFOLIUM Schwaegr, suppl t 143. B 2:410.
H. LEUCOCLADULUM Muell, Flora 33: 79. B 2:414, Ore.
H. LEUCONEURUM Sulliv & Lesq. B 2:411.
H. LOREUM L. B 2:421 Ore, Eu.
H. LUTESCENS Huds. B 2:411. Ore, Cal. Eu.
H. MEGAPTYLUM Sulliv. B 2:412. Ore.
H. MYOSUROIDES L. B 2:414.
 Variety **STOLONIFERUM** Muell, Syn 2: 500. B 2:414 as sp.
H. NECKEROIDES Mitt, J L sc 8:38. B 2:416 as alleghaniense.
H. NEVADENSE L esq, Cal ac mem 1:33. B 2:412. Nev.
H. NOTEROPHYLUM Sulliv. B 2:418 as serpens.
H. NUTTALLII Wils, Bryol Brit 334, 339, in note. B 2:411.
 Variety **STOLONIFERUM** Lesq. B 2:411.
H. OCHRACEUM Turner. B 2:420. Eu, Ore.
H. OREGANUM Sulliv. B 2:416. Vancouver Isl.
H. OETHOCLADON Beauv. B 2:418 as serpens.
H. FINNATIFIDUM Sulliv & Lesq. B 2:412.
H. PLUMIFER Mitten, J L sc 8:41 t 7? B 2:420 as subimponens.
H. POPULEUM Hedw, spec t 70; Fl Dan t 2564. B 2:413. Eu, Sierra Nevada. Atlantic states.
H. PSEUDOSERICUM Muell, Flora 33:89. B 2:412, Ore.
H. FULCHELLUM Dicks. B 2:417. Eu, Cal (Hedw, spec musc t 68 = strigosum fide. B 2:415).
H. RADICALE Beauv. B 2:418 as serpens.
H. RAMULOSUM Hampe; Muell syn 2:486. B 2:410 as crispifolium.
H. RIPARIOIDES Hedw, Musc Frond 4 t 4. B 2:415 as rusciforme.
H. RIPARIUM L. B 2:418. Cal, Nev, Ut, Eu, Cuba.
H. ROBUSTUM Hook, Musc Exot t 108. B 2:417. Ore.
H. ROYAE Austin, bot gaz 3:31. B 2: 415, Cal. = rusciforme?
H. RUSCIFOLIUM Neck. B 2:415 as rusciforme.
H. RUSCIFORME Weiss. B 2:415. Eu, Cal.
H. RUTAEULUM L. B 2:413. Nev, Eu.
H. SALEBROSUM Hoffm. B 2:413. Wash. Nev, Colo, Eu, Id.
H. SEQUIETI Muell, Flora 1875, 91. B 2:420 as circinale.
H. SERPENS L. B 2:418. Alk, Cal, S Am; Eu.
H. SPINULOSUM Hedw, spec t 69, 72. B 2:418 as serpens.
H. SPLENDENS Hedw. B 2:420, Ore, Eu.
H. STOKESII Turner, Musc Hib t 15 f 2. B 2:415. Eu, Cal.
H. STOLONIFERUM Hook. B 2:414. Alk, Cal.
H. STRIGOSUM Hoffm. B 2:415. Cal, Chili, Eu.
H. SUBIMPONENS Lesq. B 2:419.
H. SYLVATICUM L. B 2:417. Ore, Eu.
H. TRICHOOPHORUM Spruce. B 2:417. Eu, Ore.
H. TRIQUESTRUM L. B 2:40. Eu, Ore.
H. TURFACEUM Lindb. B 2:417. Eu.
H. UNCINATUM Hedw. B 2:419. Eu, Colo, Ut, Asia
H. UNDULATUM L. B 2:417. Cal, Ore, Eu.
H. VALLUM Sulliv & Lesq. B 2:413 as asperimum.
H. WHIPPLEANUM Sulliv. B 2:410, SF.

Genus **HYPOCHAERIS** Linnaeus.

Mostly per herbs, with scapose, oft branched sts, mostly basal tufted lvs pinnatifid or entire, and mostly large lg-ped hds; inv oblg-cylindric to campanulate, its bracts herbaceous in several sr: receptacle flat, chaffy; fls y. ak oblg to linear, 10-ribbed, contracted above or the outer truncate: pap of 1 row of plumose bristles, sometimes with some sh'er simple ones.

H. GLABRA L, Sp Pl 810; Mant 2:460. B 1:430. Greene, Cal ac b 2:405, Cruz.
H. RADICATA L. Ab 446. McClatchie, Er 2:125, Pasadena.

Per; st several, slender, 3-6 dm hl, branched or rarely simple; lvs spreading on the ground, oblanceolate to ovate, pinnatifid-lobed to dentate, 5-15 cm lg, hirsute; hds 2.5 cm broad or more; ak rough, all with slender, lg beaks.

Genus **HYPTIS** Jacq.

Jacq, Coll 1:101 (1786).

H. ALBIDA HBK Nov Gen et sp 2:319. Mex. B 1:591.

HYPTIS EMORYI Torr.

T, Ives R 20. B 1:591, CD! Baja' Ar.
H. LANATA Pohl ex Bth, L ab Gen et sp 84. (T, bot Mex bound 129 is error)
H. LANIFLORA Bth, bot sulph t 20. B 1:591. Cape San Lucas.

H. POLYSTACHYA HBK, Nov Gen et sp 2:321. B 1:591 as probably spicata.
H. SPICATA Poiteau in Ann Mus Par 7:474. Bth bot sulph. B 1:591.

H. TEPHRODES G 5:164. B 1:591. Cape San Lucas.

HYSSOPUS L, syst ed 1 (1735).

H. OFFICINALIS L, sp pl 569. Eu. B 1:590.

IBIDUM Salisb in Hort sc tr 1:291 (1812). = *Spiranthes* fide IK.

I. BECKII M 1:128 based on *Spiranthes* Beckii Lindl, Orch pl 472.

I. LACINIATUM M 1:128 based on *Gyrostachys dacinata* Small, Fl SE US 318.
I. LONGILABRIS M 1:128 based on *Spiranthes longilabris* Lindl, Orch pl 467.

I. ODOBATUM M 1:128, based on *Neottia odorata* Nutt, Phil ac J 7:98.

I. OVALIS M 1:128, based on *Spiranthes ovalis* Lindl, Orch pl 466.

I. PRAECOX M 1:129 based on *Limodorum praecox* Walt, Fl Car 221.

I. ROMANZOFFIANUM M 1:129 based on *Spiranthes Romanzoffiana* Cham, Linn 3:32.

I. TORTILIS M 1:129 based on *Satyrion spirale* Sw, Prod 118.

I. INTERMEDIUM M 1:129 based on *Spiranthes* i (Ames, *Rhodora* 5:262). = *gracilis* x *vernalis*.

(See House, M 1:128-9 for fuller synonymy.)

IBERVILLEA Greene, Er 3:75.

I. LINDBHEIMERI Greene, based on *Maximowiczia lindheimeri* Cogn, in DC mon og phan 3:726 (1881).

IDRIA K 2:34. Cur 1:133 as *Fouquiera*.
I. COLUMNARIA K 2:34. *Hesperian*, My 1866. f. Cur 1:133 as *Fouquiera columnaris* K. B 1:79 s.

ILLECEBRACEAE. A 1:163d.

ILEX L, syst ed 1 (1735).

I. MYRSINITES Pursh Fl 1:119.

B 1:99 as *Pachystima* M.

ILYSANTHES Raf, ann Nat 13 (1820).

I. GRATICOIDES Bth in DC 10:419.

B 1:571. = *riparia* fide IK.

I. BIPARIA Raf, ann nat 13.

IMPATIENS Riv ex L, syst ed 1 (1735).

I. AUREA Muhl, Cat 26.

I. BAISAMINA L, sp pl 938. Asta. B 1:93.

I. BIFLORA Walt, Fl Carol 219.

I. FULVA Nutt Gen Am 1:146.

B 1:93. = *biflora* fide IK.

I. PALLIDA Nutt, Gen Am 1:146.

B 1:93. = *aurea* fide IK.

IMPERATOR HOOKERI Rupr.

IMPANTEA Remy in C Gav, Fl Chil 4: 257, t 48 (1849). = *Amblyopappus* fide IK.

I. CHILENSIS Remy, lc 259.

B 1:385 as A: *pusillus*.

INULA L, Diss Dass 25 (1747).

I. ERICOIDES T. N Y Lyc ann 2:212.

P 3:148. = *Aster ericaefolius* fide IK.

INDIGOFERA L, Hort Cliff 487 (1737).

I. ANIL L, Mont 2:272.

Br 2:149, Purissima, Baja.

IODANTHUS T & G Fl 1:72 (1838).

I. DENTATUS P 3:254.

I. ONACTIS P 3:245.

I. ALPINA P 3:245.

I. LINARIIFOLIA P 3:245.

I. STENOMERIS P 3:246.

IONIDIUM Vent, Jard Malm t 27 (1803).

I. CONCOLOR B & H, ex Wat, Bib Ind 81. P 1:42 as *Solea concolor*.

Genus **IPOMOEA** Linnaeus.

L, syst ed 1 (1735).

Twining, trailing, ascending or rarely erect herbs with large showy solitary or cymose fls: sep = or unequal: cor funnelform or campanulate, the limb entire, 5-angled or 5-lobed: sta equal or unequal included: fil filiform or dilated at base; anth globose or ovoid: ova 2-4-celled, 4-6-ovuled; sty filiform, included; stig 1-2, capitate or globose: cap septifragally 2-4-valved, 2-4-seeded. Morning Glory.

I. AUREA E. Z 2:148. Br 2: Purissima, Baja.

I. BOXA-NOX L, sp pl ed 2, 228. Br 2: Comondu, Baja.

I. BRACTEATA Cav Ic 5:51 t 447, Mex. Z 2:148.

I. JICAMA Br 2:188. Baja.

I. NIL-WEISSH, in Fl Bras 7:228 t 79 f 1. B 1:533. = *mexicana* fide IK.

I. PURPUREA Roth, bot Abh 27. Ab 308. Parish, Z 1:56 Sber. SD (Cleveland). LA (Lyon, "bad in a 40 acre vineyard").

Ann, pubescent; st retrorsely hairy, twining or trailing: lvs broadly ovate, deeply cordate, acute or acuminate, 5-10 cm broad; ped slender, 1.5-fid; sep lanceolate or oblg, acute, pubescent or hirsute toward the base; cor 5-7 cm lg, blue or p varying to w; ova 3-celled, rarely 2-celled; cap depressed-globose, sh'er than sep. Morning Glory. Tropical Am.

I. MEXICANA G, syn Fl 2 (1):210.

Da 12.

I. QUAMOCLIT L, sp pl 159.

Z 2:148.

I. RADIATIFOLIA K 7:163. Cur 1:143 as *leptotoma* T.

1. SAGITTIFOLIA Burn, f, Fl Ind 50. Java. (H & A, bot Beech 151? = *Convolvulus luteolus* fide B 1:534.)

1. TRIFIDA G Don, Gen syst 4:280. Br 2:188, Comoudu, Baja.

IPOMAEA VERSICOLOR Meisn.

Mina lobata Crev. 1824.

IPOMOPSIS Michx Fl 1:141 (1803). = *Gilia* fide IK.

1. ELEGANS Lindl, bot reg t 1281. B 1:496 as G: aggregata.

1. INCONSPICUA Smith, Exot bot t 14. B 1:498 as G: l.

Genus *IRIS* Tournefort.

T ex L syst ed 1 (1735).

1. BEECHHEYANA H & A, bot Beech 395. = *Douglasiana* fide IK.

1. DOUGLASIANA Herbert, H & A bot Beech 395. B 2:139. Par 301.

IRIS HARTWEGII Baker.

Bard Chron 1876 (2): 323. B 2:139. A 1:86 (d of var. *australis* Parish).

Variety **AUSTRALIS** Parish.

Ha 69, not Jac. A 1:86.

1. LONGIPETALA Herb, H & A bot Beech 395. B 2:140. Par 286. S Ber mts (Parish 484).

IRIS MACROSPHON Torr.

T. Pac Ry R 4:144.

Par 286 t. B 2:139, 484. A 1:96 d.

1. MISSOURIENSIS Nutt, Phil ac J 7 (1) 582. B 2:140.

1. PARISHII Foster. A 1:86 as *Hartwegii* var: *australis*.

1. TENAX Dougl, bot reg t 1218. B 2:140.

1. TOLMIEANA Herb, H & A bot Beech 396. B 2:140 as *missouriensis*.

IREGNE P Br, Hist Jamaica 358 (1756). **1. ALTERNIFOLIA** Wat.

Br 2: Magdalena Isl?

ISCHAEMUM L, Gen ed 2, 525 (1742). **1. LEERSIODES** Munro, Am ac pr 4: 363. China. B 2:262, SF.

ISOCILUS R Br, in Alt Hort Kew ed 2, 5:209.

1. RAMOSUS Focke, Tid Nat Wet 4:69 (1851). M 1:128 as *Epidendrum ramosum*.

Genus **ISOCOMA** Nuttall.

Rather rigid tufted erect suffrutescent plants with thick lvs and a corymbose terminal cluster of rather sm rayless hds: inv-bracts coriaceous, closely imbricated, tips herbaceous, appressed: cor permanently y; tube slender; limb ventricose, its seg more or less connivent about the sty: sty-appendages ovate or somewhat nar'er, pubescent: ak compressed or subterete, silky-pubescent pap bristles num, unequal, the inner lg'est and oft flattened and awn-like, faintly scabrous.

1. ACRA DENIA Greene, Er 2:111.

Bigelovia acradenia Greene, Torr cl b 10:126 (1883). Mohave. So Utah.

Aster acradenius OK, Rev Gen 318 (1891).

1. HIETELLA M 1:6.

1. TRIDENTATA Greene, Er 2:111 based on *Bigelovia tridentata* Greene, Torr cl b 10:126 (1883). Cedros Island.

1. VERNONIODES Nutt, Am phil soc tr 7:320 (1840). Ab 399.

Greene, Erythea, 2:110.—"of low sub-saline plains in the southern parts of

Cal, but more generally along the sea-board, and on the coast islands, southward to Cedros."

Pyrrcoma menziesii H & A, Bot Beech 351 (1841).

Aplopappus menziesii T & G, Fl 2:242 (1842).

Linosis dentata K 2:16 (1863).

Glab or com loosely pubescent, 6-12 dm hi, erect; lvs oblanceolate, more or less serrate, 2-4 cm lg, oft with many fascicled ones in their axils; hds 8 mm hi, campanulate; bracts of inv obtusish; pap-bristles stout, none very perceptibly flattened.

Bigelovia veneta G 8:638 (1873).

Rosa; Cruz; Cedros; Ar; thruout So Cal and Baja.

Bigelovia Menziesii A Gray.

Baccharis veneta HBK, Nov Gen et Sp 4:68 (1820).

Genus *ISOETES* Linnaeus.

1. GARDNERIANA A 1:34.

1. GUNNII A 1:34.

1. HOCKEII A 1:34.

1. HOWELLII A 1:33.

ISOETES MELANOPODA J. Gay.

Variety **PALLIDA** Engelm.

Variety **CALIFORNICA** A. A. Eaton.

ISOETES MEXICANA Underw.

1. MULLERI A 1:34.

1. NIGRITANA A 1:34.

ISOETES ORCUTTII A. A. Eaton.

1. SACCHARATA E. Parry Wyo 24.

1. STUARTI A 1:34.

1. WELWITSCHII A 1:34.

ISOLEPIS R Br Prod 221 (1810). =

Scripus fide IK.

1. CARINATA H & A, T, N Y Lyc ann 3:349. B 2:217 as S: c.

1. KOILOLEPIS Steud Cyp 318.

B 2:217 as S: *carinata*.

1. LEPTOCAULIS T Pac Ry R 4:153.

B 2:217 as S: *riparius*.

1. RIPARIA R Br, Hook Fl Tasm 2:89 t 145. B 2:217 as S: r.

ISOMERIS Nutt, T & G Fl 1:124. A 1:125d.

1. ARBOREA Nutt, T & G lc. A 1:125d. Ab 181. Da 2. B 1:50. Par 150. P 1:200

(Cedros) as *Cleome isomeris*. Br 1:207 Rosa.

Variety **GLOGOSA** Cov. A 1:126d. Ab 181.

ISOPYRUM L, Gen ed 2, 245 (1742).

1. CLARKII K 7:131. Cur 1:130 as stipitatum G.

1. HALLII G 8:374.

B 2:427.

1. OCCIDENTALE H & A, bot Beech 316. Variety **COLOBATUM** Greene.

"Rather smaller than type and rts more fleshy (slender fusiform): fls smaller, rose-r: follicles oblg-linear, 1/2 lg. somewhat nar'er above, less obliquely acute than in type. Fremont's Peak, Santa Cruz Mts., Calif. (L. W. Cushman)."—Greene, Er 1:125.

1. STIPITATUM G 12:54. B 2:427.

ISOTHECIUM (Moss).

1. MYOSUROIDES Bridel.

B 2:414 as *Hypnum* m.

Genus *IVA* Linnaeus.

L, Hort Upsal 285 (1748).

Hds heterogamous, discoid; a few

marginal fls pist and with a sh tubular cor; other more num fls stam (ova and stig abortive), with runnelliform 5-lobed cor and undivided sty: anth nearly distinct: inv-scales few, com in 1 sr united into a cup: receptacle chaffy with linear or spatulate scales subtending sterile fls: ak obovate, thick, naked, oft granulate; no disk at apex: lvs simple, at least some of lower opp: hds sm, nodding on sh pedicels, either in axils of lvs, or in terminal spk or panicles.

IYA AXILLARIS Pursh.

Pursh, Fl 2:743. B 1:343. Z 2:357. British Am. SD Co (Parish 1018).

Per, branching, span to $1\frac{1}{2}$ " hi, varying from minutely hirsute to glab, and the sessile entire lvs from broadly linear to spatulate or obovate (1" lg): hds solitary in their axils, hemispherical: inv-scales about 5, broad, united at base or beyond the middle.

Variety **PUBESCENS** G, bot Wilkes exp 350. B 1:343. Villous with lax spreading hairs: inv turbinate, almost entire. SF.

British Columbia: SD Co (Parish 1018).

IYA HAYESIANA A. Gray.

G 11:78. P 1:204 Cedros. B 1:615. SD Co! Baja!

Herbaceous from woody base, 1-3° hi, erect, paniculately much branched: cauline lvs opp, spatulate-oblg, very obtuse 1-2' lg, base nar'd into a distinct petiole lvs of branches alt, gradually passing into linear bracts, uppermost hardly surpassing the hds: hds rather crowded in panicle spk: inv of 5 rounded and completely distinct imbricated scales.

Genus IVESIA Torrey & Gray.

IVESIA BAILEYI S. Watson.

Wat, bot king 90, 448. B 1:184. P 1:105 as *Potentilla* P.

Viscidly pubescent: sts slender, 6' hi: lfts 3-10 pairs, cuneate-obovate, 3-7-toothed or parted: fls on slender pedicels in a diffuse panicle: cx $1\frac{1}{2}$ " lg, exceeding the y spatulate pet: sta 5: carpels 1-5. W. Humboldt mts, Nev. Baja mts!

Potentilla baileyi Greene, pitt 1:105.

Variety **SETOSA** Wats, bot king 90. B 1:184. Lfts all parted, lobes setosely tipped: more glandular-hairy. E Humboldt mts, Nev.

I. DEPAUPERATA G B 1:184. P 1:105 as *Potentilla* d. SF mts, Ar.

I. GORDONI T & G, Pac Ry R 6:72. B 1:183. G 6:530. P 1:106 as *Potentilla* G.

Variety **PYGMAEA** Wat, B 1:183:—"1-2' hi or less, glandular, hirsute; lfts very sm, crowded: sta sometimes 10." P 1:196 as *Potentilla* decipiens. (I. pygmaea G 6:530.)

I. LYCOPODIODES G (vide Gordon) —"nearly glab: lfts still more crowded and imbricated, thick and rounded." (I. lycopodioides G 6:530.)

I. GRACILIS T & G, Pac Ry R 6:72 t 11 (1857). B 1:184 (*Potentilla* Newberryi G 6:532. P 1:105.)

I. KINGII Wat bot king 90, 448. B 1:184. P 1:105 as *Potentilla* K.

I. LEMMONI Wat 20:365. P 1:104 as *Potentilla* L.

I. LYCOPODIODES G (vide Gordon) var.)

I. MUIRII G 8:627. B 1:183. P 1:106 as *Potentilla* M.

I. PICKERINGII T, bot Wilkes exp 288 t 4 (1862). G 6:531. B 1:182. P 1:105 as *Potentilla* P.

I. PINNATIFIDA Wat 20:364.

I. PYGMAEA G 6:531. B 1:183 as Gordon var. P 1:106 as *Potentilla* decipiens.

I. SANTOLINOIDES G 6:531. B 1:183. Z 2:162. P 1:106 as *Potentilla* s. Sber Co (Parish 1819). Mt Brewer. Lake Tahoe.

I. TRIDENTATA G 7:338. B 1:182 as Horkella t. P 1:105 as *Potentilla* Tilling.

IVESIA UNGUICULATA A. Gray.

G 7:339. B 1:183. 2:444. P 1:105 as *Potentilla* u. Sber mts (Parish 151). Yosemite.

S Ber mts (Parish 151); Yosemite.

I. UTAHENSIS Wat 17:371. P 1:162 as *Potentilla* U.

I. WEBBERI G 10:71. B 1:183. P 1:105 as *Potentilla* W.

JACOBINIA Moric Pl Nouv Am 156 t 92 (1846).

J. CALIFORNICA Nees in DC 11:729. B 1:589 as *Beloperone* Cal.

JAMESIA T & G Fl 1:593 (1840).

J. PAUCIFLORA Nees in Neuweid, Reise N Am 2:442 (1844). B 1:428 as *Stephanomeria* minor.

JEFFSONIA Small.

J. PABEYI Small, Torr cl b 23:18 (Ja 1896), based on *Saxifraga* P.

J. MALVAEFOLIA Small, lc 19, based on *Saxifraga* m.

Genus JAUMEA Pers.

JAUMEA Pers. Syn 2:397 (1807). A 1:246 d.

J. CAENOSA G. B 1:372. P 1:90, Mig. Ab 426. B 1:392. Da 9. Z 2:359. A 1:246 d.

Salt marshes, British Columbia to Mexico.

Genus JUGLANS Linnaeus.

L. Gen ed 1, 291 (1737).

JUGLANS CALIFORNICA S. Watson.

Wat. A 1:96d. Ab 97. Da 16. M 1:50 as major.

J. MAJOR M 1:50 based on rupestris variety major T. = *Californicus*?

J. EUPESTEIS E. in T. Sitgr r 171 t 15. R 2:93.

Variety MAJOR T, Sitgreave R 171 t 16 (1854). M 1:50 as sp.

JUNCODES COMOSUM Sheldon.

Luzula comosa Meyer.

Variety **MACRANTHERUM** Parish.

Parish, Er 3:59.—"Seeley's Flat, alt 5000', Sber mts." Based on *Luzula comosa macranthera* Wat.

J. SUBCONGESTUM M 1:105.

Genus JUNCUS Linnaeus.

L. syst ed 1 (1735).

Per or sometimes ann, glab plants, growing com in marshes or wet places, with simple terete or flattened, com pithy sts: lvs terete, channelled or flat: fls solitary or clustered in cymes, panicles or hds. g'ish or brownish: sta 6 or 3: cap 3-celled, or 1-celled with 3 parietal placentae, many-seeded. Rush.

J. ACUMINATUS Howell, B 2:209 as J.

dubius E.

J. ACUTUS L, sp pl 325. B 2:205, 204 (of E as J. robustus). Variety **SPHAEROCARPUS** E, Wheeler's R 6:376. B 2:204 as J. robustus. Ab 80.

Sts and lvs 0.5-1.5 m hi, stout, rigid and pungent, growing in large tussocks; panicle 6-12 cm lg, about equaling spathe, secondary spathes lg-acuminate; clusters 2-4-fld; perianth seg scariously margined, outer broadly lanceolate, acute, inner obovate, deeply emarginate, 2 mm lg; cap subglobose, apiculate, about 4-mm lg.

Salt marshes near the coast. Port Ballona; Washington.

J. ASEPTUS Parish = J. Nevadensis.

JUNCUS BALTICUS Willd.

Willd in Ges Nat Fr Berl Mag 3:298 (1809). Da 18. Ab 80. B 2:205. Det-hard, Reichb Ic Fl Fer 9 t 411. Greene, Cal ac b 2:414, Cruz. Br 1:217, Rosa. P 1:93 Mig.

Sts rigid, rather slender, leafless, 3-4 dm hi; panicle 2-4 cm lg; perianth seg lanceolate, acute, 4-5 mm lg, brownish; cap rather acutely angled, beaked; sds distinctly reticulate.

J. BOLANDERI E, St Louis ac tr 2:470. B 2:208.

J. BREWERI E St Louis ac tr 2:440. B 2:205.

JUNCUS BUFONII Linn.

L, sp pl 328. B 2:206. Da 18. Ha 65. Ab 81. Greene, Cal ac b 2:414 Cruz. Br 1:217 Rosa.

Sts com branching from base, 5-25 cm hi, rts fibrous; lvs 5 mm wide or less; fls mostly solitary and remote upon the spreading branches; perianth seg lanceolate, p'ish, with margins scarious, 4-6 mm lg; sta 6, sometimes 3, 2-3 mm lg; anth sh'er than fil; cap oblg, obtuse, shorter than perianth. Ann.

J. CHLOROCEPHALUS E St Louis ac tr 2:485. B 2:210.

J. COMMUNIS Meyer, Kunth Enum 3: 320. B 2:206 as J. effusus L.

J. COMPRESSUS HBK Nov Gen 1:235. B 2:205. = J. Mexicanus fide IK.

J. COOPERI E St Louis ac tr 2:586. B 2:205.

J. DRUMMONDII Meyer, Ledeb Fl Ross 4:235. B 2:206.

J. DUBIUS E St L ac tr 2:459. B 2:209. McClatchie Er 2:78, LA Co.

J. EFFUSUS L, Sp Pl 326. B 2:206. Greene, Cal ac b 2:414 Cruz. Ha 65. SF. Bog rush.

J. FALCATUS Mey Syn Luz 34. B 2:207. **J. LESUREII** Bolander, Cal ac pr 2:179. B 2:205. Curran, Cal ac b 1:150. Da 18.

Variety **ELATUS**. "Rigid, stout and tall (6" hi or more); panicle less and widely spreading (3-6')."—B 2:205). near LA. Ab 80.

JUNCUS LONGISTYLES Torr.

T. bot Mex bound 223. Ab 81. Da 18. B 2:208.

Per; sts several, simple, leafy, 3-5 dm hi; lvs much sh'er than sts, flat and grass-like, sheaths with distinct ligules; hds com 5-9 in a sparingly branched panicle, exceeding the very sh spathe; fed-fld; perianth seg g'ish, nar'ly ovate acuminate; sta 6; sds oblanceolate, min-

ute, faintly ribbed.

J. MACROPHYLLUS Cov in Ha 65. based on J. canaliculatus E, bot gaz 7:6 (1882), not Liebm. Baja! LA (Hasse). Ar (Toumey). SBER.

J. MENZIESII R Br in Hook Fl 2:192. B 2:207 as J. Falcatus.

J. MERTENSIANA Meyer, Veg Sitch 167. B 2:210. Alk. Cal. Colo.

J. MEXICANUS Willd ex Schult f syst 7:178. Ab 80. Ha 66. (J. compressus HBK.)

Closely resembling J. balticus, but more slender, 12-24 cm hi; sts somewhat flattened, sheaths frequently lf-bearing; panicles about 2 cm lg, loosely few-fld; perianth seg 4-5 mm lg, lanceolate, g'ish or slightly tinged with brown.

J. NEVADENSIS Wat, Am ac pr 14:303. Parish, Er 6:86, SBER mt meadows, distributed as J. aseptus E.

J. NODOSUS L, sp pl ed 2, 466. B 2: 208.

Sts slender, from a very slender creeping tuberiferous rtstock; lvs compressed, erect; hds few, 8-20-fld, subglobose; perianth-seg brownish, 1½-2" lg, lanceolate, acuminate, nearly equaling the nar acuminate cap; anth oblg, sh'er than fil; sds ovate, rather abruptly apiculate at each end, reticulate, brownish.

Variety **MEGACEPHALUS** Torrey. Da 18. Ab 82 as J Torreyi Cov.

J. OBUSATUS E, St L ac tr 2:495. B 2:208.

J. ORTHOPHYLLUS Cov 207. Parish, Er 6:86, SBER mts 6500-8000' alt.

JUNCUS OXYMERIS Engelm.

E, St L ac tr 2:483. B 2:249. Ha 66. Parish, Er 6:86, SBER mts, 5000' alt.

J. PAREYI E, St L ac tr 2:446. B 2: 206.

J. PATENS Meyer, syn Luz 28. B 2: 206. Ab 81. Br 1:217 Rosa.

Sts rather soft, 0.5-1 m hi; inner sheaths tipped with a sh awn; panicle rather open, about 4 cm lg; perianth seg 3 mm lg, oft brownish, spreading in fr; sta 6; cap subglobose, slightly angled, obtuse, spiculate, equaling or a little sh'er than perianth.

Ab 81, Monica mts (Hasse).

JUNCUS PHAEOPHYLLUS Engelm.

E, St L ac tr 2:484. B 2:209. Ab 82.

Sts from a creeping rtstock, acnicipital, 3-7 dm hi; lfy; lvs flat 2-6 mm wide, oft exceeding sts; fls in a single or few many-fld hds; perianth seg brownish, 3-4 mm lg, lanceolate acuminate; sta 6; anth com exceeding fil; sty-lg exerted; cap acute; sds ovate, closely reticulated.

Variety **GLOMERATUS** E. Da 18.

Variety **PANICULATUS** E. "Hds more num, few-fld, in a compound panicle: sts 1-3" hi, from a stout rtstock. Lower Sacramento valley, and also near Big Trees, Bolander."—B 2:210. Da 18. Ha 66. Ab 82.

J. PICTUS Philippi in Linnaea 33:363. B 2:205 as J. Leseurii.

J. ROBUSTUS Wat, Am ac pr 14:302. B 2:204. = J. acutus fide IK. Da 18.

P 1:208, Cedros.

See Juncus acutus sphaerocarpus.

J. SAGINOIDES, E, St L ac tr 2:461. B

3:207, as triflorus var uniflorus E.

J. TENUIS Willd., Reich Ic Fl Germ 9 t 398. B 2:207. Eu. Atlantic states. Mex. Ore. Santa Inez mts, Cal.

Variety **CONGESTUS** E, St L ac tr 2:450. "Panicle contracted and somewhat capitate, 3-9" broad; perianth and cap darker."—B 2:207.

J. TORREYI Coville. Ab 81.

Sts 2-10 dm hi; rtstocks slender, with tuberiform thickenings a few cm apart, each supporting a single st; st stout, 1-4-leaved; blade stout terete, 10-25 mm thick, spreading; hds 1-20, exceeded by the lowest bract, each 10-16 mm in diam; perianth 5-7 mm lg, seg subulate; sta 6; cap subulate, 3-sided, exceeding perianth. (J. nodosus megacephalus Torr.)

J. TERIFORMIS E, St L ac tr 2:492. B 2:207.

Variety **BRACHYSTYLUS** E, St L ac tr 2:492. B 2:207.

Variety **UNIFLORUS** E, St L ac tr 2:492. B 2:207.

JUNCUS XIPHIODES Mey.

Myer Syn Junc 50. B 2:209. Da 18. E, st L ac tr 2:481. NM. Alk.

Sts from a thick creeping rtstock, apical, 2-4" hi; lvs com broad, 2-3" wide, sheath-ligules 0; hds num, 3-20-fld, in a compound panicle; perianth-seg brownish, 1½" lg, lanceolate, acuminate, about equalling the oblg acute cap, twice as lg as the 6 sta; anth very sm, oblinear, equalling or much sh'er than fil; sds very sm, ovate-oblancoate, reticulate and finely cross-lined within the veining.

Variety **AUREATUS** E, st L ac tr 2:481. B 2:209. Hds few-fld, pale straw-color; cap exceeding perianth, with a lg'er slender beak. Monte Diablo.

Variety **MONTANUS** E, St L ac tr 2:481. B 2:209. Com 1½" hi, lvs 1-2" wide; hds 1-9, 12-50-fld; perianth com equaling the acute cap.

Variety **TRIANDRUS** E, St L ac tr 2:482. B 2:209. 1-2" hi; hds solitary or fed, oft very large, bk, many-fld; sta 3; perianth rather larger, oft dark brown, equaling or sh'er than the acute cap. Yosemite valley to Alk.

Genus JUNIPERUS Linnaeus.

Tourn, ex L, syst ed 1 (1735).

J. ANDINA Nutt., N Am Sylv 3:95 t 110. B 2:113 as Californica. =virginiana fide JK.

JUNIPERUS CALIFORNICUS Carr.

Rev Hort, sr 4, 3:352. Ab 7. Da 17. B 2:113. A 2:407d.

J. CERROSIANA K 2:37. Hesperian Mr 1860. f. P 1:197, 207 Cedros. Cur 1:147 states the fr is very different from Californicus. E, st Louis ac tr 3:588 states that a specimen in T herb is Californicus. A 2:407d.

J. COMMUNIS L, sp pl 1040. B 2:113.

J. NANA P 3:81.

J. OCCIDENTALIS Hooker. A 2:407d. B 2:113. Z 2:160. Br, Color 227 etc.

J. VIRGINIANA L, sp pl 1039. Parry, Wyo 5. Br. Colo 229, 231.

JUSSLAIA L, Gen ed 1, 126 (1737).

A 1:334d.

J. CALIFORNICA Jepson. Ab 262. A 1:335d.

A. DIFFUSA Forsk, Fl Aegypt Arab 210. A 1:333 as Ludwigia d. =repens fide IK.

J. REPENS L, sp pl 388.

A 1:334. Da 6. B 1:217.

Variety **CALIFORNICA** B 1:217. A 1:335 as sp.

JUSTICIA Houst ex L, Gen ed 1, 4 (1737).

J. INSOLITA Br 2:195, San Gregorio, Baja.

KALLSTROEMIA Scop Introd 212 (1777). =Tribulus fide IK.

K. GRANDIFLOEA G Pl Wright 1:28. B 1:91 as T: g.

K. MAXIMA Wight & Arn, Prod 145.

B 1:91 as T: m.

KALMIA L, Diss Chem 18 (1750).

K. GLAUCOA Ait, Hort Kew ed 1, 2:64 t 8. B 1:457. P 3:81. Z 2:158.

KARWINSKIA Zucc Nov Stirp 1:349 t 16.

K. HUMBOLDTIANA Zucc lc, 351. B 1:100.

Genus KELLOGGIA Torrey.

KELLOGGIA T, ex B & H Gen 2:137 (1873).

K. GALIODES T. A 1:54d. B 1:282, 2:452.

Kentia Belmoreana F. Muell, Fragm 7:99, is Howea Forsteriana.

KOCHIA Roth, in schrad J bot 1800 (1801) (1) 307 t 2.

K. AMERICANA Wat 9:93. B 2:45.

K. PROSTRATA Schred, Neues J 3 (1809) iii and iv, 35. B 2:45 as Americana.

KONIG Adans. A 1:117 as Alyssum.

K. MARITIMA R Br. Ab 180. A 1:117 as A: m.

KRAMERIA Loeffl, Ir Hisp 195 (1758). A 1:98d.

A. CANESCENS G Pl Wright 1:42. A 1:99d. B 1:60.

K. LANCEOLATA T, N Y Lyc ann 2:166. B 1:60, Ar.

K. PARVIFOLIA Bth, bot Sulph 6 t 1, Mex. A 1:157d. B 1:60.

KRYNITZKIA Fisch & Meyer Ind Sem Hort Pet 7:52 (1841). G 20:264.

K. AFFINIS G 20:270.

K. ALYSSOIDES G 20:280. Chilli.

K. AMBIGUA G 20:273. Da 12. P 1:113 as Cryptanthus ambigua. A 1:205 s.

K. ANGUSTIFOLIA G 20:272. P 1:112 as Cryptanthus angustifolia.

Type locality: "On the Colorado and Lower Gila, westward to the mts."

Eritrichium angustifolium Torrey, Pac Ry R 5:363 (1857).

Arizona; Mohave Desert; Baja Cal.

K. BARBIGERA G 20:273. P 1:114 as Cryptanthus barbiger.

Ar: So Cal: Baja!

Type locality: not given. So Utah, SBAr.

Eritrichium barbigerum A. Gray, Syn Fl 2 pt 1, 194 (1878).

Cryptanthus barbiger Greene Pittonia 1:114 (1887).

See Cryptanthus barbiger.

K. CALIFORNICA G 20:266.

Variety **SUBGLOCHIDIATA** G 20:266 based on Eritrichium Californicum var. subglochidiatum G, B 1:526. Thruout Cal. SD!

- K. CEDROSENSIS** Greene, Cal ac b 1: 204. Cedros. P 1:117 as *Cryptanthus cedrosensis*. = *K. maritima* fide IK. *K. ramosissima* G, in part fide Greene.
- K. CHORISIANA** G 20:267, based on *Eritrichium chorizianum* DC.
- KRYNITZKIA CIRCUMSCISSA** A. Gray. G 20:275; Syn Fl Suppl 428. P 1:59 as *Piptocalyx circumscissus*.
Eritrichium circumscissum, A. Gray. Washington to So Cal; Nevada.
- K. COOPERI** G 20:267, based on *Eritrichium cooperi* G, 19:89, Ar. P 1:19 as *Allocarya cooperi*.
 Mohave Desert.
- K. DENTICULATA** Greene, Cal ac b 1: 205. P 1:114 as *Cryptanthus denticulata*. = *K. muriculata* fide IK.
- K. DICHOTOMA** Greene, Cal ac b 1:206. G, Syn Fl suppl 428. P 1:161 as *Piptocalyx dichotomus*. Nev.
- K. DUMETORUM** Greene, ex G 20:272. Tehachapi Pass (Curran).
- KRYNITZKIA FOLIOSA** Greene. Greene, Cal ac b 1:205, 226.
 Guadalupe Island (Palmer).
- K. GRAYI** Vasey & Rose, US Nat Mus pr 11:536.
 "Sm ann, 1-3' hi, hispid; lvs filiform, $\frac{1}{2}$ " lg; spks bractless, simple or in pairs, closely fd; ex barely $\frac{1}{2}$ " lg, open in fr; nutlets 1-3d" lg, ovate, trigonous, grayish, muriculate-roughened; ventral groove broad, triangular at base, closed above; sty twice as lg as nutlets." Lagoon Head, Baja (Palmer).
- K. JAMESII** G 20:278. P 1:57 as *Oreocarya suffruticosa*.
- K. JONESII** G 20:274; Syn Fl Suppl 427. Greene, Cal ac b 2:407, Cruz. P 1:113 as *Cryptanthus Jonesii*.
 Santa Cruz Island (Greene).
- K. LEOCARPA** F & M, Sem Petrop 1835, 36. Greene, Cal ac b 2:407, Cruz. Br 1:215 Rosa. P 1:117 as *Cryptanthus leiocarpa*. P 1:91, Mig. B 1:528 as *Eritrichium leiocarpum* Wat.
 See *Cryptanthus leiocarpa*.
- K. LITHOCARYA** G 20:265; Syn Fl Suppl 423. P 1:13 as *Allocarya lithocarya*.
- KRYNITZKIA MARITIMA** Greene. Greene, Cal ac b 1:204, 226.
 Quintin (Palmer 630, 698—"probably this").
 Santa Margarita Island (Br).
 Krynitzkia ramosissima G in part.
 Guadalupe Island (Palmer, Greene).
- K. MICRANTHA** G 20:275, based on *Eritrichium micranthum* Torr. CD. Baja. Da 12.
 Variety **LEPIDA** G, based on *Eritrichium micranthum* var. *lepidum* G. P 1:59 as *Eremocarya lepidia*. Baja, foothills!
- KRYNITZKIA MICROMERIS** A. Gray. G 20:274. Greene, Cal ac b 2:407, Cruz. Br 2:187, Magdalena Island. Da 12.
 Santa Cruz Island (Greene).
- K. MICROSTACHYS** Greene, ex G 20:269; Syn Fl Suppl 425. Br, Z 1:114, Cat. P 1:116 as *Cryptanthus microstachys*. Da 12.
- KRYNITZKIA MOHAVENSIS** Greene. Greene, Cal ac b 1:207.
 Mohave Desert (Curran).
- KRYNITZKIA MURICATA** A. Gray. Washington to Baja California.
- K. MURICULATA** G 20:273. Da 12.
- Wash. Baja. Based on *Eritrichium muriculatum* A DC, Prodr 10:132.
- K. OKYCARYA** G 20:277. P 1:116 as *Cryptanthus flaccida*. A 1:206 s. Based on *Eritrichium oxycaryum* G.
 Mohave Desert (Pringle, 1882).
 See *Cryptanthus flaccida*.
- KRYNITZKIA OXYGONA** A. Gray. G 20:277, Greene, Cal ac b 1:207.
- K. PALMERI** G 20:278. P 1:57 as *Oreocarya Palmeri*.
- KRYNITZKIA PTEROCARYA** A. Gray. G 20:276. P 1:120 as *Cryptanthus pterocarya*. Greene, Cal ac b 1:206. Based on *Eritrichium pterocaryum* Torrey.
 Type locality: "Walla Walla river, Wash."
 Colorado Desert (Parish 731); Wash.
- K. RACEMOSA** Greene, Cal ac b 1:208. A 1:207 s.
- K. RAMOSISSIMA** G 20:277, in part. Greene, Cal ac b 1:203. P 1:116 as *Cryptanthus ramosissima*. G, Syn Fl Suppl 428. A 1:13 d, 207 as *Cryptanthus ramosissima*.
- K. ROSTELLATA** Greene, Cal ac b 1: 203. G Syn Fl Suppl 425. P 1:116 as *Cryptanthus rostellata*. (= *K. microstachys* fide IK.)
- K. SERICEA** G 20:279. P 1:58 as *Oreocarya sericea*.
- K. SPARSIFLORA** Greene, Cal ac b 1: 203. P 1:116 as *Cryptanthus sparsiflora*. G 20:277 in part, Syn Fl Suppl 428.
- KRYNITZKIA TORREYANUM** A. Gry. San Bernardino (Parish 928) to Oregon.
- K. TRACHYCARPA** G 20:266. P 1:14, 15, as *Allocarya trachycarpa* (Cal) and *A. uliginosum* (Chilian specimens).
- K. VIRGATA** G 20:279. P 1:58 as *Oreocarya virgata*.
- K. WATSONI** G 20:271. P 1:120 as *Cryptanthus Watsoni*.
- KUHNISTERA** Lam Encyc 3:370 (1789). = *Petalostemon* fide IK.
- K. PULCHERRIMA** M 1:28 as *KUMLIEMIA* Greene, Cal ac b 1:337.
 Type: *Ranunculus hystriculus*.
- K. COOLEYAE** P 3:190s.
- K. HISTERICULA** P 3:188.
- KUNZIA** Spreng, syst 2:475 (1825). = *Purshia* DC fide IK.
- K. TRIDENTATA** Spreng, lc. = P: t fide IK.
- K. YEMAEURBA** Nutt, Am Phil SC, NS, 7:455 errata (1841). = *Troximon* fide IK.
- K. HETEROPHYLLA** Nutt, lc. B 1:439 as *T. chilense*. (T: h fide IK.)
- LACENOSTOMA** HBK, Nov Gen et sp 3:198 t 232 (1818).
- L. HASTULATA** G 11:87. M 1:2 as *Vincetoxicum* h. B 1:620, 2:464. = *Gonolobus* h fide IK.
- L. PARVIFLORA** T, bot Mex bound 165. M 1:2 as *Vincetoxicum* p. = *Gonolobus* p fide IK.
- LACINIARIA**
- L. ASPERA** P 4:318. Ill.
- L. EATLEI** P 4:316. Ala.
- L. ELEGANTULA** P 4:316. Ala.
- L. ELONGATA** P 5:57. Miss.
- L. HELLERI** M 1:6, based on *Liatris* H.
- L. LANGLOISII** P 5:58. La.
- L. NERVATA** P 4:317. Mo.
- L. PILOSA** M 1:6, based on *Serratula* p.
- L. PUNCTATA** M 1:57, based on *Gilia setosissima punctata* Cov, Wash biol sc

pr 7:72.

L. SCABRA P 4:317. Ill.

L. Serotina P 4:315. La.

L. SPICATA P 4:315.

L. VITTATA P 4:315. Miss.

Genus **LACTUCA** Linnaeus.

Syst ed 1 (1735).—A 1:289d.

L. CAMPESTRIS P 4:37.

L. CANADENSIS L, Syst ed 10, 1193.

B 1:619. Z 2:232.

L. INTEGRIFOLIA Bigel, Fl Bost ed 2, 287. (Nutt Gen 2:124 is pulchella fide B 1:442.)

L. LEUCOPHOEA G 19:73. B 1:442. Z 2:232. —alpina fide IK.

L. MOESSII P 4:38.

L. PULCHELLA DC 7:134. B 1:442.

LACTUCA SCARIOLOA L.

Sp Pl ed 2, 1119.—A 1:252d. Z 2:77.

Abrams, Fl LA 450. Rather common in LA.

Genus **LAGOPHYLLA** Nuttall.

LAGOPHYLLA Nutt, Am phil sc tr, ns, 7:390 (1841).

Slender, villous or hirsute, rigid and brittle, paniculately branched ann, with mostly alt com entire lvs, and many sm hds of pale salmon or y vespertine fls, subtended by foliaceous bracts: bracts of iv 3, thin; herbaceous, flat on the back, completely enclosing its obcompressed ak and decid with it: rays cuneate, palmately 3-cleft, their ak obovate-oblong, smooth, nearly straight, pointless: receptacle flat; chaff a single row of distinct bracts surrounding about 5 perfect but sterile disk-fls: pap o.

L. DICHOTOMA Bth 317. B 1:367.

L. FILIPES G, Pac Ry R 4:109. B 1:367.

L. MINIMA K 5:53. Cur 1:40, "probably depauperate *L. ramosissima*. B 1:376s.

L. RAMOSISSIMA Nutt, Am phil sc tr, n sr, 7:390 (1841). Cov 133. Ab 424. Da 9. B 1:367.

SD Co! Wash.; Idaho; Nevada.

Canescent with a loose silky pubescence, 2-8 dm hi, diffusely paniculate; lowest lvs spatulate-obovate, stm-lvs lanceolate to linear, all entire: hds 6 mm hi, 12 mm broad, including the expanded rays; ak 3 mm lg.

Type locality: "in the prairies near Walla-Walla, in Oregon."

LAGOTHAMNUS Nutt, Am phil sc tr, ns, 7:416 (1841). =Tetradymia fide IK.

L. AMBIGUUS Nutt lc 417. B 1:407 as T: spinosa.

L. MICROPHYLLUS Nutt lc 416. B 1:407 as T: spinosa.

LAMARCKIA Moench, Meth 201 (1794).

L. AUREA Moench lc B 2:299. Da 19. Ab 49. Z 1:132.

LAMIUM Tourn ex L syst, ed 1 (1735).

L. AMPLEXICAULE L, sp pl 579. B 1:590.

LANGLOISIA Greene.

"Rigid diffusely branched and low ann: lvs pinnately divided, but only terminal seg of herbaceous and lf-like development, this mostly cuneiform, or linear, with dilated and 3-toothed tip; pinnae in several pairs, but mostly reduced to a lg w bristle or tuft of bristles: fls few or solitary in axils of lvs,

not bracted: cx-lobes equal, spinescent-tipped tube with scarious spaces between the angles and eventually splitting to base, as into 5 distinct sep, the disrupted members then almost rotate-spreading: cor usually bilabiate and sta declined-incurved: cap strongly and even almost sharply triquetrous, many-seeded: sd: mucilaginous when wetted."—P 3:30 *Cor bilabiate; sta declined.

L. MATTHEWSII P 3:30 based on Loe-selia M. Mohave.

L. SCHOTTII P 3:30, based on Navarretia S. Ut. Son. CD.

L. SETOSISSIMA P 3:13, 30, based on Navarretia s (Gilia S of G).

One-2' hi, at length forming a depressed tuft, cinereous-pubescent or glabrate: lower lvs linear and slightly toothed, upper becoming oblanceolate, spatulate, or with a cuneate 3-lobed dilated apex, more or less incised, all the teeth or lobes and here and there even the margins beset with very lg w bristles, many of the lower in pairs: cx-lobes similarly retrose-tipped: cor p or p'ish, 6-9" long: ovules several or rarely few in each cell. Mohave: CD; Ut; Baja.

Navarretia setosissima T & G, Ives Cola Exp 22.

Navarretia Schottii T, Bot Mex B 145 (a sm form).

LANTANA L, Gen ed 1, 185. P 4:46.

L. CAMARA L, sp pl 627. Baja.

LAPHAMIA G, Pl Wright 1:99 t 9 (1852).

LAPPULA Moench, Meth 416 (1794). = Echinosperr-

mum Lehm, fide IK.

L. CALIFORNICA Par 307.

L. CENCHROIDES P 4:96.

L. COLLINA P 4:96.

L. DESERTORUM P 4:95.

L. FREMONTII P 4:96.

L. HETEROSPERMA P 4:94.

L. MONTANA P 4:96.

L. NERVOSA Par 307.

L. OCCIDENTALIS P 4:97.

L. REDOWSKII P 4:97.

L. TEXANA P 4:94.

L. VELUTINA Par 307.

LARIX Tourn ex Adans Fam 2:480 (1763).

L. LYALLII Parl, J bot 1:35. B 2:112.

L. OCCIDENTALIS Nutt Sylv 2:199. B 2:112.

Genus **LARREA** Cav.

LARREA MEXICANA Moric.

Pl Nouv Am 71 (1833-46). B 1:92. Par 196.

Creosote bush of the desert regions; Greasewood. Gobernadora or Hideondo.

Kern Co to Magdalena bay, Baja (Bryant). Texas, Mohave (Or 1419). CD.

Larrea glutinosa E, Wislitz R (1848).

Zygophyllum tridentatum DC 1:706 (1824).

Type locality: "in regno Mexicano."

Larrea tridentata Cov. 75.

Zygophyllum Californicum Torr & Frem.

Genus **LASTARRIAEA** Remy.

Sm diffuse rigid fragile an, with as-

pect of Chorizanthe: inv 0; perianth inv-like, coriaceous, tubular, 5-6-cleft to middle; the narrow teeth rigid, awned, recurved and hooked: sta 3, inserted on the throat; fl very short, with sm membranous appendages intervening at their insertions: ak triangular; embryo curved.

LASTARRIEA CHILENSIS Remy.
Ab 112. Z 1:209. Z 2:39. A 1:83d.

Genus LASTHENIA Cass.

Cass, Opusc 3:88 (1834).

Low slender glab com succulent ann, with opp linear or narly lanceolate mostly entire lvs, their sessile bases connate around the st: hds middle-sized on ped terminating the st and branches composed of y fls: inv-bracts a single sr connate by their edges into a 5-15-toothed glab g cup; rays com present: disk fls all fertile, 4-5-lobed: ak linear or narly oblg, compressed, sometimes slightly 2-3-nerved: pap of 5-10 firm subulate-tipped paleae or a.
L. AMBIGUA G 6:547. B 1:382 as Bahia a. =Eriophyllum a fide IK.
L. CALIFORNICA Lindl, bot reg t 1780. B 1:384 as glabrata.
L. GLABERRIMA DC 5:664. B 1:384. =glabrata fide IK.

L. GLABRATA Lindl, bot reg t 1780, 1823. B 1:384, 2:457. Da 9.
Abundant throughout western Cal.
Variety **COULTERI** Gray.

Somewhat fleshy, rarely slightly pubescent; sts erect, branching, 2 dm hi or less; peduncles somewhat enlarged under the erect hds; inv hemispheric; rays 5-10 mm long; ak narrowly obovate-oblong, with obtuse edges and with minute scattered rough points or glands.

Abrams, Fl LA 429.—"Common in saline marshes, especially along the coast."

L. CONJUGENS P 1:221, Antioch, Cal.
L. COULTERI Greene, Cal ac b 1:192. =glabrata fide IK.

LASTHENIA MINIMA Suks.

Suksdorf, W 15:50.

A 1:253 fdr.

LASTAEA ARGUTA Brackenridge.
Ferns of U S expl exp 196. B 2:346 as Aspidium rigidum var: argutum.

Genus LATHYRUS Linnaeus.

Much resembling Vicia, but com larger, with broader lvs and showy fls: sty-branches dilated and flattish above, hairy along the inner side.

L. ALBUS G in B 1:442.

LATHYRUS ALEFELDI White.

Parish, Erythea 6:88. Throughout SD Co. 200-5,500ft alt, clambering over bushes on hillsides.

A 1:70 fdr. Ab 226.

L. CALIFORNICUS Dougl, bot reg t 1144. B 1:158 as vestitus. =maritimus fide IK.

L. DECAPHYLLUS Hook f 1:159.

Variety **MINOE** H & A, bot Beech 138. B 1:159 as paluster var: myrtifolius.

L. DISSITIFOLIUS Nutt, T & G Fl 1:277. B 1:158 as Vicia truncata var: linearis.

L. ECIRRHOSUS M 1:54.

LATHYRUS LAETIFLORUS Greene.

A 1:70 fdr.

L. LANSZWERTII K 2:149. B 1:159 as paluster.

L. LINEARIS Nutt, T & G Fl 1:277. B 1:158 as Vicia truncata var: l.

L. LITTORALIS B 1:160.

L. MARITIMUS Bigelow. (Torr, bot Mex Bound =vestitus fide. B 1:159). B 1:158.

L. MYRTIFOLIUS Muhl. B 1:159 as paluster var: m.

L. NEVADENSIS Wat 11:133. B 1:160. 2:442.

L. OCHROLEUCUS T, Pac Ry R 4:77. B 1:159 as sulphureus.

L. ORNATUS Nutt, T & G Fl 1:277. B 1:160.

L. PALUSTRIS L, sp pl 733. B 1:159. Eu, Quintin, Wash, nor rare under trees in So Cal!

L. POLYMORPHUS Nutt, Gen 2:97. B 1:160.

L. POLYPHYLLUS Nutt, T & G Fl 1:274. B 1:158.

L. PUBESCENS Nutt, T & G Fl 1:274. B 1:159 as palustre var: myrtifolius.

LATHYRUS SPLENDENS Kellogg.

K 7:90. Cur 1:136. Ab 1:69d. Par 216.

L. STRICTUS Nutt, T & G Fl 1:276. B 1:159 as vestitus.

L. SULPHUREUS Brewer ex G 7:399. B 1:159.

L. TOREYI G 7:337. Cal. B 1:160. Par 27.

L. VENOSUS Muhl, ex Willd sp pl 3:1092.

Variety **GRANDIFLOBUS** T, Pac Ry R 4:77. B 1:159 as vestitus.

Variety **OBOVATUS** T, Pac Ry R 4:77. B 1:160 as Nevadensis.

L. VESTITUS Nutt, T & G Fl 1:276. Par 27. B 1:159. 2:442. Da 5. Greene, Cal ac b 2:395 Cruz (1 pl).

L. VILLOSUM T, Pac Ry R 12:58. B 1:150 as Torreyi.

LATHYRUS VIOLACEUS Greene.

A 1:70 fdr.

LATHYRUS WATSONI White.

LAURACEAE A 1:222d.

LAURENTIA Micheli, ex Adans Fam 2:134 (1763).

L. CARNOSULA B & H Gen 2:549. B 1:444.

Genus LAVATERA Linnaeus.

Tree Mallow. Involucel 3-6-cleft: staminal column divided above into num fl: sty filiform, stigmatic on inner side; fr depressed; the several carpels separating from the prominent more or less dilated axis, indehiscent, 1 seeded; sd ascending: lvs angled or lobed; fls axly or in terminal racemes.

L. ASSURGENIFLOA K 1:11, 14. Cur 1:133. Par 232 t. P 1:86 Mig.

Branching shrub 4-10' hi. the herbage canescent or nearly g; lvs palmately 3-lobed and dentately toothed: cor 2' broad; pet rose-color, with darker veins; claws bearded at base; axis of fr below the flattened or low conical summit with as many longitudinal wings or ridges as carpels, these inserted in intervals or depressions. "naturalized" in the region of SF bay, where it is com cultivated. Anacapa

Island.

L. ACERIFOLIA Cav, in Anal Cienc nat 6:339. Canary Islands. Z 2:6.

L. INSULARIS Wat 12:249. B 2:437. Z 1:110.

L. OCCIDENTALIS Wat 11:113, 125. B 1:83. Z 1:110.

L. VENOSA Wat 12:249. B 2:437. Z 1:110, 189.

P 1:263, San Benito Island, "most abundantly in the canons, where it forms dense and nearly impassable thickets."

L. THERINGIACA L, sp pl 691. Z 2:6. Eu.

LAYIA H & A, bot Beech 148 (1833). =Blepharipappus fide P 2:245.

L. CALLIGLOSSA G, Am ac mem ns, 4:103 (1849). Cal. B 1:370.

L. CAENOSA T & G, Fl 2:394. B 1:369. Parish, Z 5:119, "Marin Co to Monterey only."

SD to Marin Co on the beach.

L. CHRYSANTHEMOIDES G 7:360. B 1:370.

L. DOUGLASII H & A, bot Beech 358. B 1:370.

L. ELEGANS T & G Fl 2:394.

Mendocino Co to Baja. B 1:369. Da 9. **L. FREEMONTII** G, Am ac mem ns, 4:103. B 1:370.

L. GAILLARDIODES H & A, bot Beech 148. B 1:369.

L. GLANDULOSA H & A, bot Beech suppl 358. Ha 130. B 1:368. Da 9. Par 27.

CD! British Columbia to Baja.

L. HETEROSTICHA H & A, bot Beech suppl 358. B 1:368.

L. HIERACIODES H & A, bot Beech suppl 358. B 1:369.

L. HISPIDA.

"A ft hi or less, diffusely branched from base, rather densely hispidulous thruout, and with a few sm dark stipitate glands on inv: lvs all nar and entire: hds sm: rays w, but sh and inconspicuous: pap bright w, of 10 aristiform bristles, with copious sh villous hairs, the innermost of which are interlaced. Hi mts south of Tehachapi, 24 Je 1889."—P 2:20.

L. NEOMEXICANA G, Pl Wright 2:98. B 1:368 as glandulosa.

L. PENTACHAETA G, Pac Ry R 4:108 t 16. B 1:369.

L. FLATYGLOSSA G, Pl Fendl 103. Ha 130. Da 9. B 1:370. Par 152 t. Greene, Cal ac b 2:403, Cruz. P 1:90 Mig. Br. 1:212 Rosa.

Throughout western Cal.; Cruz; Rosa; Baja.

Variety **BREVISETA** Da 9.

LEDUM Rupp ex L, syst ed 1 (1735).

L. CALIFORNICUM K 2:14. Cur 1:141 as glandulosum.

L. GLANDULOSUM Nutt, Am phil sc tr 8:270. B 1:459. Z 2:158. Par 105. Parry, Wyo 15. K Br, Z 1:83 Point Reyes.

L. LATIFOLIUM Jacq Coll 2:308. P 3:84.

L. PALUSTRE L, sp pl 391. B 1:459.

LEERSIA Soland, ex Sw Prod Veg Ind Occ 21 (1788).

L. CILIATA Hedw B 2:386 as Encalypta e (Moss).

L. ORYZOIDES Sw, Prod Veg Ind Occ 21. B 2:262.

LEGOUSIA Durand, Fl Bourg 1:37; 2:26 (1782). =Specularia fide IK.

LEGOUSIA Delarb, Fl Aux ed 2, 45 (1800). =Legousia of Durand.

L. BIFLORA Ab 386.

LEMMONIA G 12:162.

LEMMONIA CALIFORNICA A. Gray. G 12:162. B 2:468. Z 1:83. Parish, Z 5:116. K Br, Z 1:83. Jepson, Er 1:16

Uncle Sam mt. Baja mts!

Lake Co; Mohave; CD.

Genus **LEMNA** Linnaeus.

Stipe attached to the basal margin of frond: reproductive pouches 2, triangular, opening as clefts in either margin of basal portion of frond: rt solitary: spadix of 1 pist and 2 stam fls; spathe various; fl curving upward from margin of frond: anth 2-celled, transversely dehiscent.

LEMNA CYCLOSTASA Chev.

Fronds com in colonies of 2-8, oblg to obovate-oblg, com somewhat falcate, 2. 3-4.5 mm lg, 7-1.5 mm wide, com strongly unsymmetrical; fr elongated-ovate, slightly unsymmetrical: sd oblg-ovoid. SBer (Parish 1100). Ab 78.

LEMNA GIEBA L.

Fronds from 1-4 in a colony, com 2, orbicular to obovate, 2-5 mm lg, 2-4 mm wide, more or less unsymmetrical, thick, convex and slightly keeled above, com more or less gibbous beneath, com 3-5-nerved; fr winged with rounded lobes in either side of stig: sds 1-7. Com in slow-running streams and ponds.

McClatchie, Er 4:195, "Quite common in the coast counties of southern California: 2:78, Pasadena; 4:9. Parish, Er 7:9 SBER valley. B 2:190. Ab 78.

Parish, Erythra 7:90—SBER valley.

LEMNA MINIMA Phil.

Parish Er 7:90. SBER. Ab 78.

Fronds com in colonies of 2, oblg to elliptic, 1.5-3.9 mm lg, 9-2.7 mm wide, slightly to prominently convex above, with a row of papulae along the midnerve, convex below, com nerveless; pistil sh, clavate; sd oblg, pointed. Bear (Parish). Lakeside, SD Co.

LEMNA MINOR Linn.

SBER (Parish 914); SD (Cleveland).

Fronds solitary or with 2 or more in a colony, round to elliptic-obovate, 2-4 mm lg, 1.5-3 mm wide, symmetrical, thickish, convex on both sides, upper surface sometimes keeled and with a row of papulae along the midnerve, obscurely 3-nerved; fr not winged; sds solitary. B 2:190. Ab 78.

L. PAUCICOSTATA Hegelm. B 2:190.

L. POLYRRHIZA L. B 2:190 as Speirodela p.

L. TORREYI Austin. G Man 479. B 2:190 as Valdiviana.

LEMNA TRISULCA Linn.

Parry, Wyo 18, Ab 78 Bear. B 2:189.

Fronds floating and submerged, oblong to oblong-lanceolate, with a lg stipe attached to the basal margin; oft somewhat falcate, 5-10 mm long, 2-3 mm wide; terminal margins serrulate and fluted, acute at apex.

San Bernardino (Parish 745).

LEMNA VALDIVIANA Phil.

Da 17. B 2:189. =cyclostasa.

LEONTODON L. Gen ed 1, 239 (1737).L. BOREALE DC. B 1:440 as *Apargidium* b.L. TARAXACUM L. B 1:439 as *Taraxacum dens-leonis*.**LEPAEGYEA** Raf. =*Shepherdia*.**L. CANADENSIS** P 3:79.**LEONURUS** L. syst ed 1 (1735).

L. CARDIACA L. sppl 584. B 1:590.

L. SIBIRICUS L. sp pl 584. B 1:590. Sib. China.

LEPIDUM L. A 1:120d. Par 80.

L. ACUTIDENS Howell. Ab 168. A 1:120d.

L. ALYSSOIDES G. B 1:47. Z 2:236.

L. BIPINNATIFIDUM Desv. P 3:157.

L. CAMPESTRE R Br. B 2:43.

L. DICTYOTUM G 7:329. Da 2. Er 2:

178 LA Co. A 1:120. B 1:45. 2:432.

Variety **ACUTIDENS** G. A 1:120 as sp.

L. DRABA L. sp pl 645. B 2:432. Z 2:228. P 4:203. Eu.

L. FLAVUM T. Pac Ry R 4:67. B 1:46. A 1:120d.

L. FREMONTII Wat. bot king 30 t 4 f 3-4. B 1:47. A 1:121d.

L. GLAUCUM P 4:312.

L. INTERMEDIUM G. Pl Wright 2:15.

8 1:47. Da 2. A 1:122 as medium. Penson. Er 1:15 Scott valley.

L. LASIOCARPUM Nutt. T & G Fl 1:15. Ab 168. P 1:86 Mig. 263 San Benito Isl. Baja. B 1:46.

Variety **TENUIPES** Wat. A 1:121. Baja mts!

L. LATIFES Hook. Ic Pl t 41. B 1:45.

Da 2. Er 2:178 LA Co. A 1:121d. SF, SD!

L. LASIOCARPUM (H & A, bot Beech 324. =nitidum fide IK). Nutt. T & G Fl 1:115.

L. LASIOPHYLLUM Nutt. Br 1:207 Rosa.

L. MANZIESII DC syst 2:539. B 1:46. Greene, Cal ac b 2:390 Cruz. P 3:156.

L. MONTANUM Nutt. T & G Fl 1:116. Parry. Wyd 5. B 1:47. 2:432. Z 2:236.

L. RANUM Wat. bot king 30 t 4 f 5-7. B 2:432.

L. NITIDUM Nutt. T & G Fl 1:116. B 1:46. 2:432. Da 2. Ab 168. Greene, Cal ac b 2:390 Cruz. A 1:122d. SF Quintin.

L. OXYCARPUM Nutt. T & G Fl 1:116. B 1:46. 2:432.

L. RETICULATUM P 3:156.

L. WRIGHTII G. Pl Wright 2:15. B 1:46.

Genus **LEPIDOSPARTUM** Gray.

A low rigid g scaly-bracted almost leafless shrub, somewhat fastigiately branching, and bearing somewhat corymbose or racemously arranged hds of pale y fls; inv bracts of 2 sets, the inner long, linear, 8-12 in 2 or more series, the outer much sh'ter and imbricated; receptacle naked; rays 0; disk fls with long tube and lanceolate-linear spreading lobes; ak oblong, terete, 8-10 nerved, with large epigynous disk; pap copious, of soft w capillary bristles.

LEPIDOSPARTUM SQUAMATUM A. G 19:50. Cov 140 Ab 438. Greene, Cal ac b 2:404.

Branching broom-like shrub, 6-12 dm

hi; young seedlings and shoots floccose-tomentose, with spatulate entire lvs, becoming glabrous and nearly leafless in age; hds 6-10 mm nl, terminal on the branches.

Type locality: "low hills of the Sierra Santa Monica," LA Co, Cal.

Linosyris squamatum G 8:290 (1870).

LEPIDOSTEPHANUS Bartl. Ind Sem

Hort Gotting (1837); ex Linnaea 12 (1838): Litt 82. =*Achyrachaena* fide IK.

L. MADIOIDES Bartl. lc. B 1:371 as A: mollis.

LEPIONUM Fries. A 1:163. =*Sper-*

1:208 Rosa. P 1:86 Mig. Z 2:342. B 1: gularia fide IK.

L. GRACILE Wat 17:367. A 1:163 s.

L. MACROTHECUM F & M. Kindl mon Lep 16. Greene, Cal ac b 2:392 Cruz. Br

1:208 Rosa. P 1:86 Mig. Z 2:343. B 1:

71. 2:435. A 1:163 s.

L. MEDIUM Fries. B 1:71. A 1:158, 163 s

L. RUBRUM Wahlenb. Fl Gothob 45. Z 2: 342. =*Spergularia rubra* fide IK.

L. TENUE P 1:63. A 1:158 s. Alameda, Cal.

LEPITOMA T ex Steud Nom ed 2, 2:29 (1841). =*Pleuropagon* fide IK.

L. BREVIFOLIA T. lc. B 2:307 as *Lap-*

hochlaena californica.

LEPTANTHUS Michx Fl 1:24 t 5 (1803) =*Heteranthera* fide IK.

L. GRAMINEUS Michx Fl 1:25. B 2:187 as *Schollera graminifolia*. =H: g fide IK.

LEPTARRHENA Behr. Cal ac pr 1:45. Cur 1:136.

L. INUNDATA Behr. Cal ac pr 1:45. Cur 1:136 as *Saxifraga peltata* T.

L. PYROLAEFOLIA P 3:82. P 2:19 Mt Rainier.

Genus **LEPTILON** Raf.

Ann or bien herb with sm racemose or paniced hds of w fls: inv mostly campanulate, its nar bracts in 2 or 3 sr: rays sm, com sh'ter than diam of disk, pist or 0; disk fls perfect, com 4-toothed or 4-lobed: sty-branches sh: ak flattened: pap bristles in 1 sr.

LEPTILON CANADENSE Britton.

St hispid-pubescent or glabrate, 2 m hl or less, paniculate, much branched; lvs com pubescent or ciliate, the lower spatulate, dentate or entire, 5-10 cm lg, the upper linear and mainly entire; hds very num, about 4 mm broad; inv 2-3 mm hl; its bracts linear, acute, glabrate, the outer sh'ier; rays num, w, sh'ier than pap and mostly sh'ier than their tubes. (*Erigeron Candense* L.). Ab 404. A common weed in waste places and cult fields.

LEPTOBRYUM Schimp (Moss).

L. PYRIFORME Schimp. B 2:389. Eu; Asia; S Am; Cal.

LEPTOCLOA Beauv, Agrost 71 t 15 f 1 (1812).

L. FASCICULARIS G. man ed 5, 623 t 9. B 2:292. =*Diplachne* f fide IK.

L. IMBRICATA Thurber in B 2:293. Da 19. =*Diplachne* f fide IK.

L. MUCRONATA Kunth, Rev Gram 1:91. Ab 42.

Genus **LEPTODACTYLON** H. & A.

LEPTODACTYLON H & A bot Beech 369 t 89 (1841). =*Gilia* fide IK.

More or less woody or shrubby, commonly tufted, very leafy plants: lvs commonly alt, and much fasciated in ax, palmately 3-7-parted, acerose-subulate, rigid, pungent: fls showy, solitary and sessile or few in clusters at the summit of branches or branchlets: cor salver-shaped, the throat somewhat funnel-form: fl short, attached equally in or below the throat; anth short, included: cap many-seeded: sds not mucilaginous.

L. CALIFORNIUM H & A, bot Beech suppl 369. Ab 317. A 1:175d B 1:492 as G: c.

L. HELLII M 1:146.

L. PATENS M 1:146.

L. TENUILOBUM M 1:146.

LEPTODON CIRCINATUS Sulliv, Pac Ry R 4:189 t 1. B 2:409 as Alsia abletina.

LEPTOXYMENIUM (Moss).

L. CRISTATUM Hampe. B 2:407 as Pterigynandrum filiforme.

L. DUPLICATO-SERRATUM Hampe, Linnaea 30:460. B 2:407 as Pterogonium gracile var: d-s.

LEPTOSEBIS Nutt. Am phil sc tr ns, 7:438 (1841). = Malacothrix fide IK.

L. SONCHOIDES Nutt, lc, 439. B 1:434 as M: S.

LEPTOSIPHON Bth, bot reg sub t 1622 (1833). = Gillia fide IK.

L. ANDROSACEUS Bth, lc. B 1:491 as G: a.

A 1:174 as Linanthus a.

L. BICOLOR Nutt. A 1:174 as Linanthus b.

L. DENSIFLORUS Bth, lc. B 1:491 as G: d.

L. GRANDIFLORUS Bth, lc. B 1:491 as G: densiflorus.

L. LUTEUS Bth lc. A 1:175 as Linanthus paviflorus.

L. PARVIFLORUS Bth, bot reg 19: sub t 1622. A 1:175 as Linanthus p.

Variety **ROSACEUS** Hook f, bot mag t 5863. B 1:491 as G: androsacea var: r SF.

LEPTOSYNE DC. A 1:185d.

L. EIGELOVII G, syn Fl 1 (2): 300. Cov 132. A 1:102.

L. DISSECTA G, syn fl 1 (2): 301. Z 1: 308.

L. DOUGLASII DC, Prod 10:531. Par 152 t. B 1:356. Ab 417. Da 9. A 1:186d.

L. CALLIOPSIDEA G, syn fl 1 (2): 300. Da 9.

LEPTOSYNE GIGANTEA Kell. K 4:198. B 1:356. Z 1:139. Ab 417. P 1:90 Princes Island, "very little of it on the mainland." Cur 1:140. Br 1:212

Cal ac b 2:402. Davy, Er 1:192 tetratological note.

Per: sts stout, fleshy, 6-20 dm hi, bearing at summit an ample tuft of lvs and stout peds of corymbosely arranged hds; lvs 3-pinnately divided into filiform seg; ak oblg or ovoid, obscurely 3-5-nerved, narly callous-winged: pap a slight coroniform cup.

Cruz: Rosa; Guad; SBar.

LEPTOSYNE MARITIMA A. Gray.

G 7:358. B 1:356. 2:457. Par 150. Howe, Er 1:18.

SD Co! Baja! abundant on the coast.
L. NEWBERYI G 7:358. B 1:356. = Douglasii fide IK.

L. PARTHENIOIDES G, syn fl 1 (2): 301. Z 1:308. = Coreocarpus parthenoides.

L. STILLMANI G, bot Mex Bound 92: B 1:356.

Genus **LEPTATAENIA** Nuttall.

L. CALIFORNICA Nutt, T & G Fl 1: 630. B 1:272 as Ferula c.

Variety **DILATATA** Jepson.

"Lvs nearly as in the type; peds at summit abruptly widened into a disciform dilatation, 9" in diam; fr 7" lg, 5" wide, narly margined, oil-tubes anastomosing. Bolander n. 6526."—Jepson, Er 1:63.

Variety **PLATYCARPA** Jepson.

"Caulescent, 4° hi, glab thruout, lvs binate, then pinnate, petioles dilated: lfts cuneate-obovate, 3-lobed, or the terminal 3-parted, the lobes coarsely toothed: rays equal, 2-3' lg, pedicels subequal, 5" lg: fls y: fr oblg-ovoid, 5" wide, 7" lg, broadly winged, emarginate at both ends; oil tubes, 6 on the commissural face, 3 in the intervals. Collected at nearly 2000 ft altitude in Gates canyon, Vaca Mountains; in fl 25 Mr, in fr 20 Je 1892."—Jepson, Er 1:8-9.

L. DISSECTA Nutt, T & G Fl 1:620. B 1:271 as Ferula dissoluta Wat.

L. MULTIFIDA Nutt, T & G Fl 1:630. Z 2:230. B 1:271 as Ferula multifida G.

SBer (Parish 159).

LEPTOTRICHUM Hampe.

L. FLEKICAULE Hampe. B 2:366, Eu; Wash.

L. SCHIMPERI Lesq. B 2:366.

LESKEA Hedw.

L. CALIFORNICA Hampe, Linnaea 30: 460. B 2:411 as Hypnum Nuttallii.

L. LAXIFOLIA Hook, Musc Exot t 30. B 2:410 as Hypnum l.

L. LUCENS Schwaeger, suppl t 278. B 2:406 as Hookeria l.

L. POLYCARPA Ehrh. B 2:407; Ore; Eu.

L. PULCHELLA Hedw sp t 55. B 2:417 as Hypnum p.

Genus **LESQUERELLA** S. Watson.

L. ALPINA P 4:308.

L. DIVERSIFOLIA P 4:309. Ore.

L. MACOUNII P 4:310. Assiniboia.

L. NODOSA P 4:309. Assiniboia.

L. OVATA P 4:308. Colo.

L. PARVULA P 4:308. Colo.

L. FRUINOSA P 4:307. Colo.

L. ROSEA P 4:311. Assiniboia.

L. VALIDA P 4:68.

L. FOLIACEA P 5:134.

L. VERSICOLORE P 4:310. Manitoba.

L. LUDOVICIANA P 4:310.

L. PURPUREA P 4:310.

LESQUERELLA PALMERI S. Watson. Wat 23:255. A 1:85 fdr.

Genus **LESSINGIA** Cham.

More or less floccose-woolly and sometimes glandular ann, with alt more or less serrate lvs, and sm cymosely panicled hds: fls y or oft w'ish or p'lish, all perfect: cor with slender tube and lg nar lobes, the outer ones more deeply cleft on one side and imitating a palmatifid ligule: inv campanulate or turbinate, its bracts much imbracted, appressed, herbaceous tipped: anth with slender subulate appendages: sty ap-

pendages obtuse or truncate, densely hispid, oft with a setiform cusp among the hairs; ak turbinate or cuneiform, silky-villous; pap-bristles rigid, scabrous, r or brownish.

L. ADENOPHOEA Greene, Cal ac b 1: 190. Jepson, Er 1:10, 15 near Knoxville. **LESSINGIA GERMANORUM** Cham. B 1:307. Da 8. Par 258.

S F; LA Co (Parish 176).

LESSINGIA GLANDULIFERA A. Gray. Monterey; SBer; LA; Baja! Ha 130. Ab 400.

Sts diffusely branched from a sh erect st, 1.5-2.5 dm lg, glab or glabrate above; basal lvs oblanceolate, pinnatifid, lower st lvs spinulose-dentate, those of branches 5 mm lg or less, thick and rigid, ovate-lanceolate or oblg, margins com beset with y'ish tack-shaped glands; inv campanulate or turbinate, its bracts appressed, some or all glanduliferous; fls y.

L. LEPTOCLADA G 7:351. B 1:308. Par 258 t.

L. NANA G in Bth 315. B 1:307.

L. NEMAELADA Greene, Cal ac b 1:191.

L. PAERYI Greene, Cal ac b 1:191.

LESSINGIA RAMULOSA Gray.

G in Bth 314. B 1:307.

Variety **TENUIS** G. Southeastern Cal (Hothrock).

L. VIRGATA G in Bth 315. B 1:308.

LEUCANTHEMUM (Tourn) L, syst ed 1 (1735). =Chrysanthemum fide IK.

L. VULGARE Lam, Fl Fr 2:137. B 1:401 as C: leucanthemum L.

LEUCOCERNUM Nutt ex G, NY Lyc 311 4:110 (1837).

LEUCOCERNUM MONTANUM Nutt. Nutt, lc. B 2:157.

LEUCELENE.

L. ALSINOIDES P 4:99.

L. ERICOIDES P 3:148.

LEUCOSERIS Nutt, Am Phil sc tr, ns, 7:429 (1841). =Malacothrix fide IK.

L. CALIFORNICA Nutt, lc 440. B 1:434 as M: saxatilis.

L. CARNOSEA P 3:243.

L. SAXATILIS Nutt lc. B 1:434 as M: s.

L. SPIROSA P 3:244.

L. TENUIFOLIA Nutt, lc. B 1:434 as M: t.

LEUCOTHOE D Don in Edinb N Phil J 17:159 (1834).

L. DAVISIAE T ex G 7:400. B 1:454. 2:461.

Genus **LEWISIA** Pursh.

Fl Am Sept 2:368 (1814). A 1:303d.

L. ALBA K 2:115. Cur 1:132 as rediviva Pursh.

LEWISIA BRACHYCALYX Engelm.

Engelmann, Am ac pr 7:400.

A 1:303d. B 1:79.

LEWISIA REDIVIVA Pursh.

Pursh, Fl 368.

A 1:304d. Parry, Wyo 5. Par 230. B 1:78.

L, syst ed 1 (1735).—A 1:276d.

Genus **LIBOCEDRUS** Endl.

A 2:408d. Ab 7. Da 17. B 2:116.

LIBOCEDRUS DECURRENS Torrey.

A 2:408d. Ab 7. Ha 53.

LIATRIS Schreb, Gen 542 (1791).

L. ASPERA Michx Fl 2:92. P 4:318, s.

L. HELLERI M 1:6.

LICHENES. List A 1:240-6.

LIGUSTICAM L. Gen ed 1. 76 (1737).

L. APIFOLIUM G 7:347. B 1:264. 2:451.

L. SCOPULORUM G 7:347. B 1:264 Parry Wyo 18.

L. SINENSE Z 1:95.

Genus **LILAEA** HBK.

Subaquatic st-less ann, with simple slender scapes and radical lvs, which are slightly dilated at base: fls polygamous, the one sort solitary, pist and disposed among lvs at base, with lg thread-like sty; the other mon in dense spk at apex of slender scapes: stam fls imbricated in nar oblg spk; anth nearly sessile in axis of a w linear petaloid bract: pist fls imbricated in conical crowded spk, bractless, consisting of a 1-celled, 1-ovaled ova; stig capitate: fr ovoid, costate, indehiscent.

LILAEA SUBULATA H. B. K.

Ab 15. B 2:193. Z 1:206, 2:377.

Lvs cylindric num, 12-20 cm long, 3-5 mm in diam, tapering to a point at apex; scapes 8-16 cm hl, shorter than lvs, terete; sty of solitary fls oft 12 cm lg and tipped with a capitate stig; fr 6 mm lg. SD mesas, abundant! Cuyamaca. **LILAEOPSIS** Greene. =Crantzia Nutt.

LILIORHIZA K 2:46.

L. LANCEOLATA K 2:46. Cur 1:149 as Fritillaria liliacea.

L. PRATTIANA K, Hesperian O 1862, f. Cur 1:150 as probably Fritillaria pluriflora T.

L. VIRIDEA K 2:48. Cur 1:150 as Fritillaria multiflora K.

Genus **LILIUM** Linnaeus.

Sts simple, tall and lfy, from a scaly bulb: lvs nar, sessile: fls large and showy, solitary or 2-several in a terminal raceme: perianth campanulate or funnelform; seg 6, y, r or w, oft dotted or spotted with brown, distinct, equal, spreading or recurved, with a nectar-bearing groove toward base: sta 6, hypogynous, included anth versatile; sty 1, lg, decid; stig 3-lobed: cap loculicidal; sds num, flat, horizontal, in 2 rows in each cell. Lily.

LILIUM BLOOMERIANUM Kellogg.

K 4:160. Cur 1:149 as Humboldtii.

See L. Humboldtii var. Bloomerianum.

Variety **OCCELLATUM** K 5:88. Cur 1:149 as Humboldtii.

LILIUM BOLANDERI S. Watson.

L. CALIFORNICUM Lindl, Florist 1873 t 33. B 2:167 as pardalinum.

LILIUM COLUMBIANUM Hort.

B 2:167.

L. CANADENSE L, sp pl 303.

Variety **CALIFORNICUM** Bolander, Cal ac pr 5:206. B 2:167 as pardalinum.

Variety **HARTWEGII** Baker. B 2:167 as pardalinum var: angustifolium.

Variety **PARDALINUM** Bolander, Cal ac pr 5:206. B 2:167 as sp.

Variety **PARVIFLORUM** Bolander, Cal ac pr 5:206. B 2:166 as maritimum.

(Hook Fl 2:181 =columbianum fide B 2:167).

Variety **PARVUM** Baker, J Linn sc 14: 241. Hook f, bot mag t 6146. B 2:166 as sp.

Variety **WALKERI** Wood, Phil ac pr 1868, 166. B 2:166 as parvum.

LILIUM HUMBOLDTII R. & L.

Roezl & Leicht, Duchartre obs 105. Greene, Cal ac b 2:413 Cruz. Par 189. Da 17. Ab 88. B 2:167. Ore, SD Col!

Bulbs large, 5-15 cm in diam, w or plish; sts stout, plish, puberulent or glab, 15-30 dm hi; lvs com in 4-6 whorls of 10-20 each, oblanceolate, undulate, 10-15 cm lg, 20-25 mm wide, acute, somewhat scabrous or pubescent on margins and beneath; fls com many on sh and widely spreading pedicels, 7-15 cm lg or more, scattered; seg 6-10 cm lg, 12-24 mm broad, reflexed, strongly revolute above the sh abruptly nar'ed claw, r'dish-or with maroon spots, papillose-rigid toward base; stam 4-5 cm lg, about = sty; anth oblg 8-16 mm lg, r; cap large, obovoid, acutely 6-angled.

Variety **BLOOMERIANUM**.

Variety **MAGNIFICUM**.

LILIUM KELLOGGII.

L. **LUCIDUM** K 6:144 Cur 1:149 as columbianum. B 2:167.

L. **MARITIMUM** K 6:140. B 2:166. Cur 1:149. Par 362. Z 2:375. K 2:12, Hesperian S 1859, f.

LILIUM OCCIDENTALE.

Variety **LUTEUM**.

LILIUM PARDALINUM Kellogg.

Cur 1:149. Jepson, Er 1:13. B 2:166. Z 2:375.

Variety **angustifolium** K 2:12. Cur 1:149. B 2:167.

LILIUM PARRYI S. Watson.

Dav ac pr 2:188 t 5, 6. Wat 14:256. B 2:165. Par 105. Ha 68. Ar.

Bulb sm, somewhat rhizomatous, of num thick jointed scales about 1' lg: st slender, glab, 2-5° hi, 2-10-fld: lvs com scattered, sometimes lower in a whorl, linear-oblancoate, 4-6' lg by ½' wide, mostly acuminate: fls pale y, sparingly and minutely dotted, on stout pedicels about 1' lg; seg 3' lg or more, 5-6" wide, somewhat spreading above or tips at length recurved: sta and sty a little sh'er; anth oblg, brownish, 3" lg; cap narly oblg, acutish, nearly 2' lg by 6" in breadth. Sber Co. Jac. Smith mt, SD Co!

LILIUM PARVUM Kellogg.

K 2:179. Hesperian Je 1862. Par 184 t. Cur 1:149. B 2:166. Z 2:166.

L. **PUDICUM** Pursh, Fl 1:228 t 8. B 2:170 as *Fritillaria* p.

LILIUM ROEZZI Regel.

Regel, Gartenfl 1870, 321 t 667. B 2:167 as *pardalinum* var: *angustifolium*.

LILIUM RUBESCENS S. Watson.

Wat 14:256. B 2:166. Par 74 t.

L. **SUPERBUM** L, sp pl ed 2. 434.

Variety **PAEDALINUM** Baker, J Hort sc 1873, 45. B 2:167 as sp.

LILIUM WASHINGTONIANUM Kellogg.

K 2:12, Hesperian O 1859. Par 105. Cur 1:149. B 2:165.

Z 1:245, 2:166. Wash. SD mts.

Variety **PURPUREUM** Masters, Gard Chron, sr 2:2:322 f 67. B 2:166 as *rubescens*.

Genus **LIMNANTHES** Moench.

Low diffuse ann, growing near water, with showy w or rose-colored fls solitary on axyl peduncles: carpels subglobose, at first fleshy, becoming hard and rugose.

L. ALBA Bth 301. B 1:95, 2:438.

L. ROSEA Bth 302. B 1:95, 2:438. = *Douglasii* fide IK.

L. SULPHEURA Loud Ency Pl 1543. = *Douglasii* fide IK.

L. DOUGLASII R Br in Lond & Ediab Phil Mag 2:70 (1833). Ab 238. B 1:95, 2:438. SD mts. Mendocino Co.

Glab throat, diffusely branched from base, the weak and succulent sts 15-45 cm lg; lfts incisely lobed or parted with linear acute lobes; ped 5-10 cm lg; sep lanceolate, 6-8 mm lg; pet oblong or obovate, emarginate or truncate, 13-16 mm lg, y; sty very slender, 6-8 mm lg. Floerka *Douglasii* Baill Hist Pl 5:20 f 50-54.

LIMNOBIUM Rich in Inst Par mem (1811), 32, 66 t 8.

L. EUGYRIUM Bruch & Schimp B 2:420 as *Hypnum* E.

L. OCHRACEUM Bruch & Schimp. B 2:420 as *Hypnum* o.

Genus **LIMONIUM** Adans.

Herbs, mostly with flat basal lvs. and num very sm fls cymose-paniculate on branches of bracted scapes, in 1-2-fld bracteolate clusters, forming 1-sided spikes: ex campanulate or tubular, limb scarious, 5-toothed, tube com 10-ribbed: pet 5, clawed; sty 5, separate, stigmatic along inner side: fr a utricle. Marsh Rosemary.

LIMONIUM CALIFORNICUM Small.

Lvs 15-25 cm lg, obovate-oblong, entire, fleshy-coriaceous; scape 3-6 dm hi; spikes corymbose-panicled: ex-tube more or less hairy on angles. Ab 301.

Genus **LIMOSELLA** Linnaeus.

LIMOSELLA AQUATICA Linn.

L, sp pl 2:631 (1753). Eu. Cov 173. Baja mts! B 1:571. Z 2:367. Ha 116.

Tufts 1-2 in. high: leaves fleshy, slender: semi-aquatic.

Variety **TENUIFOLIA** Hoffm. Parish, Er 3:61 Bluff lake, Sber mts.

L. TENUIFOLIA Wolf ex Hoffm Deutschl Fl, ed 2, 1 (2):29. B 1:571. = *aquatica* fide IK.

LIMODORUM PRAECOX M 1:129 a.

LINANTHUS Bth, bot reg sub t 1632 (1833). = *Gillia* fide IK.

Lvs opp, palmately divided to the base into narrowly linear or filiform divisions, rarely entire, rarely some uppermost alt: fls scattered or in terminal capitate clusters: ex-tube scarious between the ribs or ankles, its teeth equal: cor subrotate, funneliform, or short-salverform, sta equally inserted: cap with few to many sds in each cell. Included in *Gillia* by Gray.

L. ANDROSACEUS Steud. A 1:173d, 174 s.

L. AUREUS Greene, Ab 318. A 1:174d.

L. BICOLOR Greene. Ab 319. A 1:174d; S in pt?

L. CILIATUS Bth. Ab 319. A 1:9, 174d. Variety **MONTANUS** Greene. A 1:9 fdr, 174, s.

L. DENSIFLORUS Bth. A 1:174d.

L. DIANTHIFLORUS Greene. Ab 318. A 1:174d, 176.

L. DICHOTOMUS Bth. B 1:490 as G: d.

L. EASTWOODAE M 1:125.

L. FILIPES P 2:255. Jepson, Er 1:16, Eel river.

L. GRANDIFLORUS Greene. A 1:174 as *densiflorus*.

L. LEMMONI Greene. Ab 318. A 1:175d, 177.

L. LINIFLORUS Greene, Ab 317. A 1:175d, 177.

L. LONGITUBUS M 1:43.

LINANTHUS LUTEOLUS Greene.

Br 3:121. A 1:9 fdr.

LINANTHUS MONTANUS Greene.

Er 3:120. A 1:9 fdr, 174 as *ciliatus* var: m.

L. PARVIFLORUS Greene. Ab 318. A 1:174, 175d.

L. PUSILLUS Greene. A 1:175 d. Ab 318.

L. SERRULATUS M 1:125 s.

Genus **LINARIA** Tournefort.

A 1:225d.

LINARIA CANADENSIS Dum.

Char mon 149. B 1:548. Da 13. Ab 357. Par 286. Greene. Cal ac b 2:408 Cruz.

Br 1:215 Rosa. A 1:225d.

L. VULGARIS Mill. A 1:225d.

LINNAEA Bronov, in L Gen ed 1, 188 (1737).

L. BOREALIS L, sp pl 631. Eu. B 1:278. 2:452. Parry, Wyo 13.

LINOSYRIS T & G Fl 2:232 (1840). = *Bigelovia* fide IK.

L. ALBICAULIS T & G, Fl 2:234. B 1:217 as B: *graveolens* (et var. *albicaulis*).

L. ARBORESCENS G, bot Mex bound. B 1:315 as B: a.

L. CERUMINOSA D & H, Pac Ry 5:9 t 6. B 1:316 as B: c.

L. DENTATUS K 2:16. Cur 1:139 as B: *veneta* G et *tridentata* Greene.

L. GRAVEOLENS T & G Fl 2:234. B 1:317 as B: g.

L. HIRTELLA G, Pl Wright 1:95. M 1:6 S.

L. HOWARDII Parry. Am ac pr 6:541. B 1:316 as B: H.

L. SERRULATA T. B 1:318 as B: *Douglasii* var. = B: *viscidiflora* fide IK.

L. SONORIENSIS G 8:291. B 1:314 as B: *diffusa*.

L. SQUMATA G 8:290. B 1:408 as *Tetradymia* s.

L. TERETIFOLIA D & H, Pac Ry R 5:9 t 7. B 1:316 as B: t. A 1:195 as *Chrysoma* t.

L. VISCIDIFLORA T & G, Fl 2:234. B 1:317 as B: *Douglasii*.

Variety **PANICULATA** G, bot Mex bound 80. B 1:317 as B: *paniculata*.

Genus **LINUM** Linnaeus.

Ann or per herbs, sometimes woody at base, with alt or opp, rarely whorled, sessile lvs, and perfect fls: infl axyl or paniculate: stipules a pair of glands or

0; sep 5; pet 5, fugaceous: sta 5, sometimes with interspersed staminodia: ova 4-5-celled or falsely 8-10-celled; ovules 2 to each cell: cap 5-10-valved.

L. ADENOPHYLLUM G 8:624. B 1:90.

L. ARISTATUM E, Wislitz R 101. B 1:89.

L. BREWERI G, Cal ac pr 3:102 (1863). B 1:90, 2:438. Z 2:344.

L. CALIFORNICUM Bth 299. B 1:90. Z 2:334. Jepson, Er 1:12.

L. CLEVELANDI Greene, Tcd b 9:121. Jepson, Er 1:12.

L. CONGESTUM G 6:521. B 1:90.

L. DECURRENS K 3:44. Cur 1:133 as *perenne*.

L. DIGYNUM G 7:334. B 1:89, 2:438. Z 2:161.

L. DEYMARIODES Cur, 1:152. Jepson, Er 1:10.

L. LEWISII Pursh, Fl 1:210 (1814). Par 276.

Cov 75, 273 Inyo mts.

Type locality: "In the valleys of the Rocky mts and on the banks of the Missouri."

Mostly per, glab and glau, 2° hl; sts mostly cespitosely-clustered, striate; lvs oft somewhat crowded, oval-linear, acute or subobtuse; 3-5-nerved (.5-5 by 5-35 mm); fls rather corymbose; sep broadly oval, mostly pointless, the inner scarious-margined, sometimes erose but not ciliate, more or less 3-5-keeled below: pet 15-20 mm lg, twice the length of ex; sta equal to or twice as lg as sep, appendages slender; pistil once or twice the length of sta; stig sht, not more than twice as lg as broad; cap 2 or 3 times as long as ex, ovoid, obtuse, incompletely 10-celled and 10-valved, the valves dehiscing widely above and separating thru the partitions nearly to center below, septa ciliate. Alk; Ark; Tex.

L. USITATISSIMUM L.

Da, 3, Er 1:58. LA. Ab 230. B 1:89.

Ann oft tufted, erect, branching above, 3-5 dm hl, glab and somewhat glau; lvs alt, 3-nerved, lanceolate, 1-4 cm lg, 2-6 mm wide; stipules 0; infl a terminal cymose lfy panicle; fls bl, 12-16 mm broad, on slender pedicels; sep ovate, acuminate, inner ones ciliate and 3-ribbed; pet obtuse, crenulate, twice the length of the sep; cap ovoid-conic, 6-8 mm lg, indehiscent; sds compressed.

L. KINGII Wat, bot king 49. B 1:89.

L. MICRANTHEUM G 7:333. B 1:90, 2:438. Z 2:161.

L. PERENNE L, sp pl 277. B 1:89. Ckl w 5:10.

Smooth and glau, 1-2½° hl, branching above, leafy; lvs linear to linear-lanceolate, 3-15" lg, acute; stipular glands 0; fls large, bl, in few-fid corymbs or scattered on the lfy branches, on slender pedicels: sep 3-5-nerved ovate, acute or obtuse, 1½-2½" lg; cap globose, acute, exceeding the sep, at length dehiscing by 10 valves, the prominent false partition long-ciliate; fr'ng pedicels erect or deflexed. Eu; Asia; Arctic circle to Mex.

L. decurrens K 3:44 f 11.

Perennial, glaucous: fls large, blue. Flax.

L. SPERGULINUM G 7:333. B 1:90. Er 1:12.

L. TRISEPALUM K 3:42. Cur 1:133 as *Helianthemum scoparium*.

LIPOCHAETA DC 5:610 (1836).

L. HASTATA K 2:106. Cur 1:140 as *Verbesina hastata*.

Genus **LIPPIA** Linnaeus.

A 1:237d.

L. BARBATA Br 2:196, "La Giganta" sierra near Comondú, Baja.

L. BETULAEFOLIA HBK, Nov Gen et

sp 2:264. P 4:48 as Phyla b.
L. CANESCENS HBK. Nov Gen et sp 2:263. P 4:48 as Phyla c.
L. CUNEIFOLIA Steud. nom 2:54. Greene, Er 1:22. P 4:47 as Phyla c.
L. CITRIODORA HBK. B 1:609.
L. FASTIGIATA Br 2:196, near San Benito, Baja, used as a tea—Damiana.
LIPPIA LANCEOLATA Michx.
 B 1:15. Ab 338. Da 13. P 4:47 as Phyla l.
 F 1:610 as

Abrams, Fl LA 338.

San Bernardino (Parish 1009).

L. LYCIOIDES B 1:610.

LIPPIA NODIFLORA Michx.

L, sp pl 20. B 1:610. A 1:238d. P 4:47 as Phyla n.

Creeping; peduncles 1-4 in. long; fls rose to w.

L. PALMERI Wat. Baja (Magdalena Isl).

L. QUERETANENSIS Kunth. P 4:47 as Phyla lanceolata?

L. REPTANS HBK. Nov Gent et sp 2:263. P 4:47 as Phyla r.

L. WRIGHTII G. Am J sci, sr 2, 16:98. M 1:147 S.

LSIANTHUS L. Mant 1:6 (1767).

L. EXALTATUS Desr in Lam Encyc 3:662. B 1:621 as Eustoma e (E: silenifolium fide IK).

L. GLAUCIFOLIUS Jacq Coll 1:64. B 1:621 as Eustoma exaltatum (E: silenifolium fide IK).

LISTERA R Br in Ait Hort Kew ed 2, 5:201 (1813).

L. CONVALLARIOIDES Nutt Gen Am 2:191. B 2:136. Ha 70.

L. CORDATA R Br lc. Br Colo 228. B 2:136.

L. ESCHSCHOLTZIANA C & S in Linnaea 3:33. B 2:136 as convallarioides.

Genus **LITEOPHAGMA** T & G.

Slender per herbs from mostly grumous rts. with chiefly basal round-cordate toothed or lobed lvs. their petioles stipuliform at base, cauline few in the simple st: fls few in a simple terminal raceme: cx campanulate or turbinate, 5-lobed, free from the ova or more or less adnate to it: pet 5, exserted, 3-7-lobed or sometimes entire: sta 10, included; anth cordate: ova 1-celled, with 3 parietal placentae; sty 3, sh: fr a 3-valved many-seeded cap.
L. AFFINIS G 6:534. Ab 192. Par 24t. B 1:198 as Tellima a.

Sts 1 or several 15-40 cm hi, scabrous-hirsute; basal lvs few, round-reniform, slightly lobed, 2-3 cm broad; cauline 3-lobed to middle, lobes coarsely toothed; cx 5 mm lg, turbinate, tube more or less adherent to ova; pedicels about equalling or slightly exceeding cx; lower pet 8-10 mm lg, 3-toothed, the upper slightly smaller, entire; sds faintly striate-pitted or almost smooth.

L. BOLANDERI G 6:535. B 1:198 as Tellima B.

L. CYMBALARIA T & G Fl 1:585. G 6:535. B 1:198 as Tellima C.

L. GLABRA Nutt. T & G Fl 1:584. B 1:199 as Tellima tenella.

L. HETEROPHYLLA T & G Fl 1:585. B 1:198 as Tellima h.

L. PARVIFLORA H & A. B 1:198 as Tellima p.

L. TENELLA Walpers. B. 1:198 as Tellima t.

LITEOSPERMUM [Tourn] L, syst ed 1 (1735).

L. ALBICANS P 4:91.

L. ANGUSTIFOLIUM P 4:91, 92.

L. CALIFORNICUM G 10:51. B 1:522.

L. CANESCENS var. T. Pac Ry R 4:124. B 1:522 as Californicum.

L. CILIOLATUM P 4:92.

L. CIRCUMSCISSUM H & A. bot Beech 370. B 1:527 as Eritrichium C. P 1:59 as Piptocalyx c.

L. LYCOPSOIDES Lehm, Pug Fl 2:28. Hook Fl 2:89. B 1:524 as Amsinckia l.

L. PILOSUM Nutt, Phil ac J 8:43. Wat bot king 238. B 1:522.

L. PLEBEIUM C & S, Linn 4:446. P 1:16 as Allocarya plebeia.

L. RUDERALE Dougl. Hook Fl 2:89. B 1:522 as pilosum.

L. OBLONGUM P 4:92.

L. LASEUM P 3:263.

LITHRAEA Miers, Trav Chili 2:529 (1826).

L. LAURINA Walp T. Pac Ry R 4:73; bot Mex bound 44 t 7. B 1:111 as Rhus l.

LOBELIA.

Herbs with alt or basal lvs, and racemose, spicate or paniculate, often leafy-bracted fls: cx-tube adnate to the ova: cor-tube straight, oblique or incurved, divided to the base on 1 side, 2-lobed; the lobe on each side of the cleft erect or recurved, turned away from the other 3, which are somewhat united: sta free from cor-tube, moradelphous at least above; 2 or all the 5 anth with a tuft of hairs at the tip, all united: ova 2-celled: the 2 parietal placentae many-ovuled; stig 2-lobed or cleft; cap loculicidally 2-valved.

L. AMOENA P 1:297, Atlantic Am.

L. DURNII P 1:297 (Palmerella debilis G).

L. ROTHEROCKII P 1:297 (Palmerella debilis var. serrata G).

L. PALMERI P 1:297 (Palmerella tenera G).

L. CAENOSULA H & A, bot Beech 362. B 1:444 as Laurentia c.

L. HIRTELLA P 3:349 based on spicata variety hirtella G. Minn.

LOBELIA SPLENDENS Willd.

Willd. Hort Berol t 86. B 1:619. Ab 388. Par 371. Da 10.

Glab or nearly so: sts erect, com simple, 4-8 dm hi; lvs lanceolate or almost linear, glandular-denticulate, all but lower sessile, 10 cm long or less; fls in a rather close oft elongated raceme; cx-tube hemispheric(4 mm lg, lobes linear-lanceolate, 8 mm lg; cor bright r, 2 cm lg, tube nar, lobes about 8 mm lg; sds oblg, somewhat rugose-tuberculate. Cuyamaca!

LOBULARIA Desv, J bot 3:172 (1814). =Alysum fide IK.

L. MARITIMA Desv, J bot 3:169. A 1:117 as A: m.

Genus **LOEFLINGIA** Linnaeus.

A 1:265d.

L. HISPANICA L, sp pl 35. Br Z 1:220.

L. PENTANDRA Cav Ic 2:39. Spain. Br Z 1:220.

Cur 1:152. A 1:265 fdr. Z 1:220 as squar-

rosa.

LOEFLINGIA PUSILLA Curran.
Curran, Cal ac b 1:152. Tehachapi,
4000 ft alt.

LOEFLINGIA SQUARROSA Nuttall.
McClatchie, Erythra 2:79, near Redondo, Cal.

Abrams, Fl LA 150.—Streets of Los Angeles and Pasadena, Davidson, McClatchie.

Calmali, Baja (Br).

Jepson, Fl Mid Cal 171.

Nutt, T & G Fl 1:174. Z 1:210. B 1:72. 2:435. A 1:26d, 265, 266d. Baja! Sacramento valley.

L. **TEXANA** Hook lc 3: t 285. G as squarrosa.

Genus **LOESELIA** Linnaeus.

LOESELIA EFFUSA A. Gray.
G 11:86. B 1:621. G Syn Fl suppl 411 as Gilla. Dunnii K.

L. **MATTHEWSII** G. B 2:466. P 3:13, 30 as Langloisia M.

L. **SCHOTTII** G. B 2:466. P 3:13, 30 as Langloisia S.

LOESELIA GUTTATA A. Gray.
G 20:302. Baja mts! G. Syn Fl suppl 411 as Gilla g.

LOESELIA TENUIFOLIA A. Gray.
G 11:86. B 1:500. G, Syn Fl suppl 411 as Gilla t.

Nearly glab: st woody at base, slender: lvs very nar; spinulose-mucronate; lower pinnately parted into a few subulate sh lobes; upper entire and filiform, l' lg: branches loosely few-fld at summit: ex bractless: cor scar, nearly salverform; its oblg lobes truncately 3-toothed at apex, about one-third as lg as nar tube: capillary fil inserted low down and much exserted: ovules 8 or 10 in each cell. Sber Co. Baja mts!

LOMATIUM Raf. A 1:272 as Peucedanum.

L. **DASYACARPUM** Ab 290. A 1:272 as P: d.

L. **MOHAVENSOIS** A 1:273 as P: m.

L. **UTRICULATUM** C & R Ab 289. A 1:272 as P: u.

L. **VASEYI** Ab 289. A 1:273 as P: v.

Genus **LONICERA** Linnaeus.

Erect or twining shrubs: leaves normally entire.

L. **BREWERI** G 6:537, 7:349. B 1:281 as conjugalis.

L. **CAPRIFOLIUM** L, sp pl 173. B 1:280 Eu.

L. **CAERULEA** L, sp pl 174. Parry, Wyo 18. B 1:281.

L. **CALIFORNICA** T & G Fl 2:7. B 1:280 as hispidula var: vacillans.

L. **CILIOSA** H & A B 1:280 as hispidula var: vacillans.

L. **CILIOSA** Poir B 2:452; Ar, Cal, British Columbia.

L. **CONJUGIALIS** K 2:66; Hesperian Ja 1861. Par 232. Cur 1:138. B 1:281. Z 2:153.

L. **ETRUSCA** Santi, Vlagg Mont 1:113 t 1. B 1:280 Eu.

L. **FLAVA** Sims, bot mag t 1318. Z 1:62 G-F. No. 112.

LONICERA HISPIDULA Douglas.
T & G Fl 2:5. B 1:280. Z 2:355. Ha 121.

Par 232. A 1:54d. Greene, Cal ac b 2:400

Cruz "only 1 plant seen."

Variety **SUBSPICATA** A. Gray.
G 8:627. B 1:280. A 1:54d. Br Z 1:114 Cat

Variety **VACILLANS** G. Br 1:211 Rosa.

L. **INTERMEDIA** K 2:66; Hesperian Ja

1861. Cur 1:138 as involucreata. B 1:281 as same.

L. **INVOLUCEATA** Banks. Par 126 t. B 1:280. Z 2:158, 355.

L. **JAPONICA** Thunb, Fl Jap 89. B 1:280. Japan, China.

L. **LEDEBOURI** Esch. B 1:281 as involucreata.

L. **INTERUPTA** Bth 313. B 1:280 as hispidula var: i.

L. **MICROPHYLLA** Hook, Fl 1:283. B 1:280 as hispidula var: Douglasii.

L. **OCCIDENTALE** Hook Fl 1:282. B 2:452 as ciliosa Poir.

L. **PILOSA** K 1:62. B 1:280 et Cur 1:138 as hispidula var: vacillans G.

L. **SEMPREVIRENS** L, sp pl 173. B 1:280.

L. **SUBSPICATA** H & A. bot Beech 349. Greene, Cal ac b 2:400, Cruz; "frequent."

Ab 381. (See hispidula var, A 1:54.)

L. **SULLIVANTI** G 19:76. Z 1:62.

L. **TARTARICA** L, sp pl 173. Sib. B 1:280.

LOPHANTHUS Bth, bot reg t 1282 (1829).

Tall per herbs, mostly coarse, with ovate and serrate petioled lvs, sm p'ish vis st w fls crowded into terminal spk: ex tubular-campanulate, 15-nerved, rather oblique, 5-toothed: cor with tube not surpassing ex: upper lip nearly erect, 2-lobed; lower somewhat spreading, 3-cleft, broad middle lobe crenate: sta 4, exserted, straight; upper pair declined, lower ascending, sh'er; anth sh, 2-celled, cells nearly parallel.

L. **ANISATUS** Bth. B 1:602 (of Bolander cat probably is urticifolius). = Agastache anethiodora Britton.

L. **SCRUPULARIAEFOLIUS** Bth, bot reg sub t 1282. = Agastache s.

Variety **MOLLIS** Fernald, Rhodora 1:220. M 1:4 as Agastache scrupulariaefolius mollis.

LOPHANTHUS URTICIFOLIUS Benth.

Bth, bot reg sub t 1282. B 1:602. Z 2:166. = Agastache u.

San Bernardino mts (Parish 331).

LOPHOCLEAENA Nees, ann nat hist sr 1: 1:283 (1838). = Pleuropogon fide IK.

L. **CALIFORNICA** Nees lc. B 2:306 = P: c fide IK.

L. **REFRACTA** G 8:409. B 2:307. = P: r fide IK.

Genus **LOPHOTOCARPUS** Durand.

Ann aquatic or bog plants; lvs lg-petioled, sagittate or cordate; scapes simple, erect, bearing fls in verticils of 2-3 at summit, the lower perfect, upper stam: pet w: sep distinct, enclosing or enveloping the fr: receptacle strongly convex: sta 9-15, hypogynous, inserted at the base of receptacle: pist num with solitary ovules and an elongated persistent sty: ak winged or crested; embryo horseshoe-shaped.

LOPHOTOCARPUS CALIFORNICUS Smith, Mo bot gard r 11:146. A 1:89 fdr.

L. **CALYCINUS** Smith, Torr cl mem 5: 25. Ab 17. Sagittaria calycina E. Mo

Bot Gard r 6: (34) 11:146.

LOPEZIA Cav Ic 1:12 t 18 (1791).

L. CLAVATA Br 2:157 t 4. Comondú, Baja.

Genus **LOTUS** Linnaeus.

LOTUS [Tourn] L Syst ed 1 (1735).

Ann or per herbs or rarely suffrutescent, with pinnately 3-many foliate lvs, and minute gland-like or rarely foliaceous or scarious stipules: fls solitary or umbellate, naked or subtended by 1-5-foliate bracts, sessile or on axyl pedicels; ex about equally 5-toothed or 5-cleft; pet free from sta, nearly equal; standard ovate or rounded, claw often remote from the others; wings obovate or oblong; keel slightly incurved, obtuse or acutely beaked; sta diadelphous: sty incurved; pod linear, compressed or nearly terete, straight or arcuate, dehiscent or indehiscent, 1-many-seeded.

See Greene, enumeration of the N Am Loti (2:133-150).

L. AMERICANUS Vell, Fl Flum 314; 7: t 134. —Collaea speciosa fide IK.

L. ARGOPHYLLUS P 2:149. (D 1890), based on *Hosackia arophylla* G.—Ab 219.—A 1:299d.

Abrams, Fl LA 219. Gabriel and Sber mts, in pine belt.

Clemente Island; SD mts!

Lotus niveus Greene, Pitt 2:148 (non Watson).

Hosackia argophylla Gray, Am ac Mem 5:316 (1854).

Syrmatium argophyllum Greene, Cal ac b 2:147.

Syrmatium niveum Greene, Cal ac b 2:148. 394.

L. ARGYRAEUS P 2:144. A 1:35 as *Hosackia rigida* var: a.

L. BRACHYCARPUS Wat, bib ind 225. A 1:300 as *humistratus*.

L. CEDROSENSIS P 2:144. Cedros.

LOTUS CONFINIS Greene.

A 1:36 fdr.

L. DAVIDSONI Ab 219.

L. DOUGLASII P 2:149.

L. GLABER P 2:148, based on *Syrmatium glabrum* Vogel.—Ab 218.—A 1:300d.

Type locality: not given (necessarily near SF).

Hosackia glabra Torrey.

Syrmatium glabrum Vogel, Linnaea 10:591 (1836).

LOTUS GRANDIFLORUS Greene.

A 1:300 d.

Abrams, Fl LA 218.—Rustic canyon, near Santa Monica. Hasse.

Guad (Palmer, Greene); SD and Sber mts (Parish)!

Hosackia grandiflora Benth, Linn Soc tr 17:366.

Hosackia? *occulta* Greene, Cal ac b 2:394. Cruz.

L. HAMATUS Da 4.

A 1:300.

L. HAYDONI P 2:149, based on *Hosackia Haydoni* Orcutt.—A 1:300.

L. HEERMANNI P 2:150, based on *Hosackia Heermannii* Dur & Hilg.—Ab 220.—A 1:300 d.

Hosackia Heermannii Dur & Hilg, Pac Ry R 5:6 t 4.

L. HUMISTRATUS P 2:139, based on *Hosackia brachycarpa* Benth.—Ab 217.—A 1:300.

Middle and So Cal; So Ariz; CD; Cat.

Hosackia brachycarpa Benth, Pl Hartw 306.

Lotus brachycarpus Watson, Bib Ind, 225 non Hochst.

L. JUNCEUS P 2:148, based on *Mosackia juncea* Benth.—Da 4.—Ab 219.—A 1:300 d.

L. LATHYROIDES P 2:146, based on *Hosackia lathyroides* D & H.—Ab 216.—A 1:301d.

Abrams, Fl LA 216.

Greene, Pittonia 2:146.

Hosackia lathyroides Dur & Hilg, Pac Ry R 5:6 t 3.

L. LEUCOPHAEUS P 2:145, based on *Hosackia grandiflora* var? *anthylloides* G. Phil ac pr 1863:350.—A 1:35d, S.

L. LEUCOPHYLLUS Greene, based on *Hosackia sericea* Benth.—Ab 219.—A 1:301d.

Sber? (Parish 1811); Monterey? (Douglas); Salinas valley (Brewer).

Abrams, Fl LA 219. Gabriel mts (Davidson).

Hosackia sericea Benth, Linn Soc tr 17:367.

L. MICRANTHUS Benth, Linn sc tr 17:367.—Ab 301.—A 1:301d.—P 2:139.

A 1:301 d.

Abrams, Fl LA 217. Monica and Santa Ana mts.

Benth, Linn Soc tr 17:367.

Hosackia micrantha Nutt in T & G Fl 1:324.

Syrmatium micranthum Greene, Cal ac b 2:147.

Hosackia parviflora Benth, Bot Reg t 1257.

Hosackia microphylla Nuttall in T & G Fl 1:326.

L. NEVADENSIS P 2:149, based on *Hosackia decumbens* var. *Nevadensis* Wat, B 1:138 (1876).—Ab 219.—A 1:301d.

Hall U 90.

Greene, Pittonia 2:149 (1890).

Donner Lake to SD Co, plentiful in open pine woods (Greene).

Type locality: "in the Sierra Nevada from the Yosemite to Sierra Co." Cal.

Syrmatium nevadensis Greene, Cal ac b 2:148.

A 1:301 d.

L. NIVEUS P 2:148, based on *Syrmatium niveum* Greene.—A 1:300 as *L. argophyllum*.

L. NUDIFLORUS P 2:141, based on *Hosackia nudiflora* Nutt.—Da 4.—Ab 218.—A 1:301d.

Variety **ANGUSTIFOLIA** Da 4.

A 1:301 d. Da 4.

L. OBLONGIFOLIUS P 2:146, based on *Hosackia oblongifolia* Benth.—Da 4.

—Ab 216.—A 1:302d.—Cov 484.

Abrams, Fl LA 216.

Greene, Pittonia 2:146 (1890).

Type locality: "in vicinibus Monterey." Cal.

Coville, CNH 4:84.

Hosackia oblongifolia Benth, Pl Hartw 305 (1848).

L. OENITHOPUS P 2:149 Guad.

L. PINNATUS Hook, bot mag t 2913. B 1:135 as *Hosackia bicolor*.

P 2:141. A 1:302 d. Ab 217. Da 4.

L. RUBELLUS P 2:146, based on *Hosackia rubella* Nutt.—Da 4.—Ab 217.

Hosackia strigosa Gray, in part, non

Nuttall.

L. PURSHIANA Da 4.
L. SALSUGINOSUS Ab 217. Da 4.
 Ab 218. Da 4. A 1302.

L. STRIGOSUS Greene, based on *Hosackia strigosa* Nutt.—Ab 218.
 Abrams, Fl LA 218. Gabriel mts.
Hosackia nudiflora Nuttall.

Hosackia strigosa Gray, partim, non Nuttall.

Mt Diablo; Cal; Cat; Cruz; Rosa; Baja.
LOTUS SULPHUREUS Greene.

A 1:36 fdr. Da 4.

L. SUBPINNATUS Lag. B 1:137 as *Hosackia* s.

L. TOMENTELLUS P 2:140. Cov 84.

Baja.

L. TORREYI Jepson Er 1:13.

L. TOMENTOSUS Da 4.

LOTUS TRISPERMUS Greene.

A 1:36 fdr.

L. WRANGELIANUS Fisch & Mey, Ind Sem H Petrop 16 (1835).—P 2:138.—Da 4.—Ab 216.—A 1:302d.

Synonymy: *Hosackia subpinnata* T & G.
LUDWIGIA L. Carol Gen 3 (1737). A 1:333 d.

L. DIFFUSA Greene. A 1:333.

Variety *CALIFORNICA*. A 1:333, 335 as *Jussilaea* C.

L. NATANS Ell sketch 1:581. A 1:333.

Tex.

L. PALUSTRIS Ell. sketch 1:211. B 1:217. Da 6. Er 1:13. A 1:333 d.

L. SCABRIUSCULA K 7:78. Cur 1:137 as *Ammannia latifolia* L.

LUINA Bth in Hook Ic Pl t 1139 (1873).

L. HYPOLEUCA Bth lc. B 1:409.

L. PIPERI P 3:291 s.

Genus *LUPINUS* Linnaeus.

LUPINUS [Tourn] L. syst ed 1 (1735).

Ann or per herbs or woody plants, with palmately 5-15-foliate lvs and adnate mostly inconspicuous stipules. Lfts entire. Fls in terminal racemes, verticillate or scattered; ex deeply bilabiate; upper lip notched; lower entire or sometimes 3-toothed or 3-cleft; standard broad, sides reflexed; wings united above, enclosing the incurved beaked keel; sta monadelphous, dimorphous; 5 anth oblong, basifixed, the other 5 rounded, versatile; stig bearded; pod 2-valved, compressed straight.

L. AFFINIS Agh. Syn Lup 20.—Greene, Cal ac b 2:394 (Cruz).

Agardh, Syn Lup 20 (1835). Ab 208. Da 5. Er 6:71. LA Co. B 1:122.

Stout and succulent, branching above, nearly glab or somewhat sh pubescent; lfts 7, cuneate-obovate, obtuse or emarginate. 2.5-4 cm lg; petioles 2 or 3 times as lg; racemes with 3-7 whorls; bracts equaling the ex; upper ex-lip bifid, lower entire or 3-toothed; pet 10-12 mm lg, bluish-p; keel broad, naked.

A luxuriant ann. 1-2° or more hr, producing large spikes of brilliant light hyacinth-bl fls. $\frac{1}{2}$ lg. the upper portions with w centers. Widely cult in Eu and Am.

L. ADUNCUS P 4:132.

LUPINUS ALBICAULIS Dougl.

LUPINUS ALBIFRONS Bth.

L. ALSOPFILIUS P 4:135.

L. AMMOPHILUS P 4:136.

L. ARBOREUS Sims bot maz t 682.—P

1:87 (Mig).—Par 165.

LUPINUS ARIZONICUS S. Watson.

L. BAKERI P 4:132.

L. BREVICAULIS Wat, bot king exp 53 t 7 f 1-4 (1871).—Da, Er 6:72 (Bear).—A 1:303 d.

Mohave (Or 74); CD (Parish 96); Ariz; Nev.

L. BREWERI G, 7:334 (1868).—B 1:122.—A 1:304d.

L. BURKEI Wat, Am ac pr 8:525 (1873).—B 1:118.—A 1:303 d.

SD mts (I. J. Gray, 17 JI 1890).
 Synonymy: *L. polyphyllus* Wat.

L. CHAMISSONIS Esch ac Petrop mem 10:288.—Ab 209.—A 1:305d.—Greene, Cal ac b 2:393 (Cruz).—Br. 1:209 (Rosa).
 Greene, Pittonia 1:87, Mig.—Cruz, as a "shrub of good size."

Abrams, Fl LA 209.—"Common on the sand-dunes along the seashore. Flg nearly year round."
 Variety **LONGIFOLIUS** Wat, B 1:177.—A 1:305 d.

SD (Cleveland); SBER (Parish 95).

L. CONGINNUS Agh, Syn Lup 6.—A 1:305 d.—Br. 1:202 (Cruz).

L. CONFERTUS K 2:192 f 59.—B 1:120.—Cur 1:134.—A 1:305 d.

SBER mts (Parish 429); Yosemite valley.

L. CYTISOIDES Agh, Sym Lup 18 (1835).—Ab 209.—Cov 4:82.—A 1:305 d.

Abrams, Fl LA 209. Gabriel and SBER mts.

Hall, U 91.

Davidson, Erythra 6:71. Pl LA Co 5. Type locality: "in California."

L. DENSIFLORUS Benth. H sc tr, n sr, 1:409.—A 1:305.—Par 87.

Sacramento valley; Baja! a showy an, less than 1° hi, with w or beautifully tinted fls arranged in umbel-like clusters on the terminal spike.

Davidson, Erythra 6:72, Bear.

Lupinus menziesii Agardh, Syn 2.

Lupinus menziesii aurea Kellogg, Cal ac pr 2:192 f, a form with light sulphur y fls.

L. DOUGLASII Agh, Syn Lap 34.—A 1:306 d.

L. EMINENS Greene, Er 1:125 (1893).—A 1:306 od.

L. FORMOSUS Greene, Fl Fran 42 (1891).—A 1:306 fdr.

Hall, U 91.

Variety **BRIDGESII** Greene.—A 1:306.

Davidson, Erythra 6:71. Pl LA Co 5.

L. FULGATUS P 3:159.

L. GRACILIS Agh, Syn Lup 15.—A 1:306 d.—Ab 208.

Monterey; Baja (Or 872).

Parish, Erythra 6:88, Witch creek (Alderson), and Jac (McClatchie).

L. GRATUS P 3:159.

L. GRAYI Wat, 11:126 (1876).—Ab 209.—A 1:307 d.

Abrams, Fl LA 209. Gabriel; SBER and Cuyamaca mts.

Parish, Erythra 3:60, Bear.

L. HELIERI P 4:134.

L. HIBTUSISIMUS Benth. H sc tr, n sr, 409.—Br, Z 1:113 (Cat).—A 1:307 d.—Ab 207.

Davidson, Erythra 6:71. LA Co.

L. INGRATUS P 4:133.

L. LACTEUS K, 5:37. = *L. microcar-*

pas Sims (fide Cur 1:134).

L. LATIFOLIUS Agh, Syn Lup 18.—A 1:307 d.

Synonymy:—*L. rivularis* var. *latifolius* Wat.

Abrams, Fl LA 208. Monica mts (Hasse).

LUPINUS LITTORALIS Dougl.

Ha 90. A 1:301 d.

Ab 216. A 1:302 d. Cov 84. Da 4.

L. MAGNUS P 3:160.

L. MICRANTHUS Douglas, ex Lindl, bot reg t 1251.—Ab 208.—A 1:307 d.—Br, Cal ac pr, sr 2. 1:209, Rosa (L. umbellatus Greene, S).

Lupinus umbellatus Greene, Cal ac b 2:145, 394. Cruz.

Variety **MICROPHYLLUS** Wat, Am ac pr 8:535.—A 1:307 d.

"(L. microphyllus, Nutt, MS.) A lower and more hirsute form, with lfts but 3-6" long. SD."—S. Watson, Am ac pr 8:535 (1873).

L. MYRIANTHUS P 4:134.

L. NEOMEXICANUS P 4:133.

LUPINUS NANUS Dougl.

LUPINUS ORCUTII S. Watson.

L. OREOPHILUS P 4:135.

L. PROPINGUUS Greene, Er 1:126.—A 1:308 d.

"Shrubby, much branched and bushy. **L. SITGREAVESII** Wat, Am ac pr 8:527 (1873).—A 1:308.

Parish, Erythea 7:93. SBer mts.

L. SPARSIFLOEUS Bth, 303.—A 1:308 d.—Ab 207.

Davidson, Erythea 6:71. LA Co.

L. STIVERSI K, 2:192 f 58.—Par 166.—A 1:308.

Parish, Erythea 3:60.—Sber mts, Cal, 5000' alt.

Curran, Cal ac b 1:135.—Folsom, on the rocky cliffs of the American river.

L. TRUNCATUS Nutt, in H & A, bot Beech 336.—Greene, Cal ac b 2:394 (Cruz).—Ab 207.—Br Z 1:113 (Cat).—A 1:308 d.

SE: Baja!

Davidson, Erythea 6:71, LA Co.

L. UMBELLATUS Greene, Cal ac b 2:145, 394 (Cruz).—A 1:308 d. = *L. micranthus* (fide Br. 1:209).

L. VOLCANICUS P 3:308.

UZULA

L. COMOSA Meyer. Br 1:205, Cruz; 217, Rosa.

Ha 66. Common wood rush. B 2:202. See *Juncoides comosum* Sheldon.

L. CAMPESTRIS DC, Fl Fr 3:161, Eu. B 2:203.

Variety **CONGESTA** Meyer. B 2:203 as *comosa* var: c (as to Am localities).

L. DIVARICATA Wat 14:302.

B 2:202. = *parviflora* fide IK.

L. MELANOCARPA Desv; Kunth Enum 3:299.

B 2:202 as *spadicea* var: m. = *parviflora* fide IK.

L. PARVIFLORA Desv, Kunth Enum 3:300.

B 2:202 as *spadicea* var: p. Variety **MELANOCARPA** G, man 536.

B 2:202 as *spadicea* var: m.

L. SPADICEA DC, Meyer, Linnaea 22:399. B 2:202.

L. SPICATA Desv, in DC Fl Fr 3:161. B 2:203, Wash. Nev.

LYCHNIS [Tourn] L. syst ed 1 (1735).

L. CALIFORNICA Wat 12:248. B 2:434.

L. PULCHRA C & S. Willd ex Steud nom ed 2. 2:81. B 1:64 et IK as *Silene laciniosa*.

Genus **LYCIUM** Linnaeus.

A 1:210 d.

LYCIUM ANDERSONII A. Gray.

B 1:543, 2:471. A 1:210 d.

Gray, Am ac pr 7:388 (1863).

Type locality: "S. E. part of Nevada."

Coville, CNH 4:167. Ut, Cal.

L. BREVIPES Bth, bot Sulph 40. B 1:542. P 1:292. San Bartolame bay, Baja.

LYCIUM CALIFORNICUM Nutt.

G, B 1:542. P 1:265 San Benito Isl. Ab 352. A 1:210 d. Da 12. B 1:542.

Abrams, Fl LA 352. On bluffs near the sea. Redondo; Long Beach; Laguna. First collected by Nuttall at SD.

L. CEDROSENSE P 1:268 Cedros.

L. COOPERI G 7:388. B 1:542. 2:471. Da 12.

L. FREMONTI G 6:46. B 1:543.

L. HASSEI P 1:222. A 1:15 fdr. Z 1:115, 143.

L. MACRODON G 6:46. B 1:542.

L. PALLIDUM Miers in ann & mag nat hist sr 2. 14:15 (1854). B 1:542.

L. PALMERI G 8:292. NM. B 1:542.

L. PARISHII G 20:305. Ab 353. Sber (Parish).

Puberulent. branches slender; lvs spatulate and lanceolate, about 6 mm lg; pedicels 4-6 mm lg; cx about 3 mm lg. its limb shortly 5-lobed; cor narly funnelform, about 10 mm lg its lobes 2 mm lg. ovate, obtuse, at length equalled by the sta.

L. PARVIFLORUM G 6:48. Ar. B 1:542.

LYCIUM PUBERULUM A. Gray.

LYCIUM RICHII A. Gray.

G 6:46. Ab 352. B 1:542. Z 1:115.

St slender; lvs narly spatulate, 2-4 cm lg; fls sh-pedicelled, 8-10 mm lg; cx-teeth lanceolate, nearly or quite equaling cor-tube; cor-lobes oval, slightly exceeding the tube.

LYCIUM TORREYI A. Gray.

G 6:47. B 1:543.

LYCOPERSICUM Hill, Veg syst 9:32 (1765).

L. ESCULENTUM Hill, Gard Dict ed 8, n 2. R 1:538.

LYCOPSIS L. syst ed 1 (1735).

L. VIRGINICA L, sp pl 138. B 1:522 as *Myosotis verna*.

Genus **LYCOPUS** Tournefert.

LYCOPUS AMERICANUS Muhl.

Cat 3: Bart Fl Phil 1:12.—A 1:277d.

Canada to Fla; Oregon to S Ber (Parish 1032).

Jepson, Fl W Mid Cal 466.

Lyconus sinuatus Ell.

L. ASPER P 3:339.

L. LACERUS P 3:340.—A 1:18 fdr.

LYCOPUS LUCIDUS Turcz.

Bth in DC 12:179.—A 1:276d. Ab 348. B 1:592.

L. MACROPHYLLUS Bth, Lab gen et sp 185. = *virginicus* fide IK. B 1:592.

L. MARITIMUS P 3:340.

L. VIRGINICUS L, sp pl 21. B 1:592.

LYCOPUS SINUATUS Ell.

- Sketch 1:26.—A 1:277, 304, as *Americanus* Muhl. B 1:592.
- LYCORIS** Herb. App 20 (1821).
- L. SQUAMIGERA** Maxim in Engl bot Jahr b 6:79, Japan. Z 1:62.
- LYGODESMIA** D Don in Edinb N Phil J (Ja-Mr 1829) 311.
- LYGODESMIA EXIGUA** A. Gray.
- L. GRANDIFLORA** T & G Fl 2:485. Z 2: 231.
- L. JUNCEA** D Don lc. B 1:441.
- L. MINOR** Hook, Fl 1:295 t 103. B 1:428 as *Stephanomeria* m.
- L. SPIROSA** Nutt, Am phil sc tr, ns, 7: 444. B 1:441, 619.
- LYONOTHAMNUS** G 20:291. (Rosaceae fide G).
- L. ASPLENIFOLIUS** Greene, Cal acy b 1:187; 2:149 t 6; 391 Cruz. Br 1:210 Rosa; Z 1:111 as *floribunda*. A 1:38 d.
- L. FLORIBUNDUS** G 20:292. Br. Z 1: 111 Cat.
- LYROCARPA** Hook and Harv in Lond J bot 4:76 t 4 (1845).
- LYROCARPA COULTERI** H-H. Hook & Harv lc. B 1:44. Z 1:271.
- LYROCARPA PALMERI** S. Watson. Wat 11:123. B 1:44. Cantilles! Quintin!
- L. KANTI** Br 2:127. Z 2:145. Baja.
- LYSTAS** Salisb in Hort sc tr 1:288 (1812). = *Habenaria* fide IK.
- L. MACROPHYLLA** M 1:127.
- L. ORBICULATA** M 1:127 s.
- LYSICHTON** Schott in Oestr bot Woch 7:62 (1857).
- LYSICHTON KAMCHATCENSIS** Sch. Schott lc B 2:187, 485. P 3:83. Par 174.
- LYSIMACHIA** [Tourn] L syst ed 1 (1735).
- L. CILIATA** L, sp pl 147. B 1:466, Ore. = *steironema ciliatum* fide IK.
- LYTHRUM** L, syst ed 1 (1735). A 1: 327 d. P 2:11-13.
- L. ADSURGENS** P 2:14. SF. Z 2:351 as *Hyssofolia*.
- L. ALATUM** Pursh Fl 1:334. B 1:214. A 1:328 as *album*.
- Variety **LINEARIFOLIUM** A 1:328 as *album*.
- L. ALBICAULE** Bert in Merc Chili (1829) 694. Z 2:351, Chili.
- L. ALBUM** HBK, Nov Gen et Sp 6:193. Da 6. A 1:328 d.
- LYTHRUM CALIFORNICUM** T & G. Fl 1:482. A 1:328 as *album*. Da 6. P 2: 12. Greene, Cal ac b 2:397 Cruz. Abrams, Fl LA 261.
- L. HYSOPIFOLIA** L, sp pl 447. P 2: 11 Napa Co. A 1:327 d. Z 2:351, SF.
- L. LINEARE** H & A, bot Beech 343 not L. A 1:328 as *album*.
- L. SANFORDI** P 2:12. Stockton, Cal. Z 2:351 as *albicaule* Bert.
- MACHAERANTHERA** Nees, Gen et sp Ast 224 (1833). = *Aster* fide IK.
- M. ASPERA** P 3:62.
- M. ASTEROIDES** P 3:63.
- M. BIGELOVII** P 3:63.
- M. CANESCENS** G. P 3:59. B 1:322 as *Aster* c.
- M. COMMIXTA** P 4:71.
- M. DIVARICATA** P 4:23.
- M. INCANA** P 3:62.
- M. INORNATA** P 3:62; 4:24.
- M. LAETEVIRENS** P 3:61, 4:23.
- M. LEUCANTHEMIFOLIA** P 3:61.
- M. MONTANA** P 3:60, 4:22, 24.
- M. MUCRONATA** P 4:72.
- M. OXYLEPIS** P 4:25. Ar.
- M. PABTENTUM** P 4:99.
- M. PAVIFLORA** G. P 3:59. B 1:322 as *Aster* p.
- M. PATTERSONII** P 3:63, 4:72.
- M. PRUINOSA** P 4:157.
- M. PULVEULENTA** P 4:23.
- M. RIGIDA** P 4:25. Ar.
- M. SESSILIFLORA** P 3:63.
- M. SHASTENSIS** G 6:539. P 3:61. B 1: 322 as *Aster* S.
- M. SUBALPINA** P 4:23. Wyo.
- M. TAGETINA** P 4:71.
- M. TEPHRODES** P 4:24. Ar, NM.
- M. VARIANS** P 4:98.
- M. VISCOSA** P 4:22.
- M. SPINULOSA** P 4:24, Ore.
- M. TANACETIFOLIA** Nees, Hook bot mag t 4624. B 1:322 as *Aster* t. P 3:59.
- MACLURA** Nutt, Gen Am 2:233 (1817).
- M. AURANTIACA** Nutt, lc 234. B 2:63.
- MACRONEMA** Nutt, Am phil sc tr ns, 7:322 (1841). = *Chrysopsis* fide IK.
- M. DISCOIDEA** Nutt lc. B 1:314 as *Aplopappus macronema*.
- M. SUFFRUTICOSA** Nutt lc. B 1:313 as *Aplopappus suffruticosus*.
- MACROSIPEPHIA** Muell, Arg in Mart Fl Bras 6 (1):137 t 42, 43 (1860).
- M. BERLANDIERI** G, Syn Fl 2 (1): 83. M 1:2 s.
- M. MACROSIPHON** M 1:2.
- MACRORHYNCHUS** Less. B 1:438 as *Troximon*.
- M. ANGUSTIFOLIUS** K 5:47. Cur 1:141 as T: *retrosum* G.
- M. CALIFORNICUS** T & G Fl 2:493. B 1:439 as T: *chilensis*.
- M. CHILENSIS** Less, Syn 139. B 1:439 as T: c.
- M. ELATUS** T & G Fl 2:491. B 1:438 as T: *Nuttallii*.
- M. GLAUCUS** Eaton, bot king 204. B 1: 437 as T: g.
- Variety **LACINATUS** Eaton, lc. B 1:437 as T: g; var: l.
- M. GRANDIFLORUS** T & G Fl 2:491. B 1:438 as T: g.
- M. HARFORDII** K. B 1:438 as T: *apargioides*.
- M. HETEROPHYLLUS** Nutt, T & G Fl 2:493. B 1:439 as T: *chilensis*.
- M. HUMILUS** Bth 320. B 1:438 as T: *apargioides*.
- M. LESSINGII** H & A bot Beech 145, 361. B 1:438 as T: *apargioides*.
- M. RETRORSUS** Bth 320. B 1:438 as T: r.
- M. TROXIMOIDES** T & G Fl 2:491. B 1:437 as T: *aurantiacum*.
- MACROSCAPA** K, Pacific 30 Je 1854.
- M. VOLUBILES** K, lc. Cur 1:148 as *Brodiaea*.
- MADAROGLOSSA** DC 5:694 (1836). = *Layia* fide B 1:368.
- M. ANGUSTIFOLIA** DC 5:694. B 1:368 as *Layia glandulosa* (of Nutt = L: *platyglossa* fide B 1:370).
- M. CARNOSA** Nutt, Am phil sc tr, ns, 7:393 (1841). B 1:369 as L: c.
- M. ELEGANS** Nutt, lc. B 1:369 as L: e.
- M. HETEROSTRICHA** DC 5:694. B 1: 369 as L: h.
- M. HIERACIOIDES** DC, lc. B 1:369 as L: h.
- M. HIRSUTA** Nutt, lc 394. B 1:370 as L: *platyglossa*.

MADARIA DC, Mem sc Phys Genev 7 (2):280 (1836).

Erect glandular pilose or somewhat hispid ann, with lanceolate com entire lvs and corymbosely paniced hds of showy y fls: inv-bracts wholly enclosing ray-ak: receptacle convex, densely fimbriate-hirsute, with a circle of bracts between ray and disk fls: disk fls sterile: ray fls fertile, showy, their ak laterally compressed, smooth, not incurved: pappus 0. = *Madia* fide B 1:359. **M. CORYMBOSA** DC 5:692. B 1:359 as *M. elegans*.

Variety **FRAGARIA** K 1:52. Cur 1:140 as *M. elegans*.

M. ELEGANS DC 5:692. Ab 420. B 1:359.

Sts rather stout, 8-15 dm hg; lvs scattered, lanceolate, entire or serrate, sessile by a broad base; whole herbage viscid with stalked glands, ped and inv hirsute with lg w hairs; hds num, in an ample corymbose panicle; rays 12-15, about 2 cm lg, y, oft with dark r base; ak rather thin and flat, dark brown or blackish.

M. RACEMOSA Nutt, Am phil sc tr, ns, 7:386. B 1:359 as *M. elegans*.

Genus *MADIA* Molina.

M. EOLANDERI G 8:391. B 1:358, based on *Anisocarpus* B (G 7:360).

M. CAPITATA Nutt, Am phil sc tr, ns, 7:386. B 1:359 as *Sativa* var: *congesta*.

M. CONGESTA T & G Fl 2:404 = *capitata* fide B 1:359.

MADIA DENSIFOLIA Greene.

P 3:167. A 1:62 fdr.

MADIA DISSITIFLORA T & G.

Hall, U 130.

Abrams, Fl LA 420. Monica mts.

Ha 130. A 1:256 d. Br 1:203 Cruz. B 1:359 as *Sativa* var: d.

M. ELEGANS Don, bot reg t 1458. Par 186 t. B 1:359. Z 2:163.

St loosely clothed with broadly lanceolate 3-nerved lvs.

Throughout Ore, Nev, Cal, into Baja! Type locality: "on the northwest coast of North Am."

Don MS, ex Lindl, Bot Reg t 1458 (1831).

Coville, CNH 4:132.

M. FILIPES G 9:189. Greene, Cal ac b 2:403 Cruz. B 1:360 Baja. Id. Brit Columbia.

British Columbia-Baja; Idaho; Cruz.

M. GLOBERATA Hook, Fl 2:24. B 1:360. Wash. SD.

Wash-SD Co foothills.

M. NUTTALLII G 8:391, 9:188. B 1:358. **M. RACEMOSA** T & G Fl 2:404. B 1:359 as *Sativa* var: r.

M. RADIATA K 4:190. Cur 1:140. B 1:359.

M. BAMMII Greene, Cal ac b 1:90. = *yosemitana* fide IK.

M. POLYCARPA P 3:167.

MADIA SATIVA Molina.

Oregon: Cal: Chilli: Rosa.

Abrams, Fl LA 419.

Sagg Chilli ed 1:136. B 1:359. Ab 419. Par 186. Br 1:212 Rosa. A 1:247 d.

MADIA TENELLA Greene.

P 3:167. Ha 130. A 1:62 fdr.

M. YOSEMITANA Parry ex G 17:219.

Z2:163, 358.

MADORELLA Nutt, Am phil sc tr, ns, 7:387 (1841). = *Madia* fide IK.

M. DISSITIFLORA Nutt, lc. B 1:359 as *M. sativa* var: d.

M. RACEMOSA Nutt, lc. B 1:359 as *M. sativa* var: r.

MADRONELLA C lfts 1:168 (vide *Monardella*).

M. CORIACEA M 1:138.

M. INVOLUCRATA M 1:138.

M. MOLLIS M 1:138.

M. PALLIDA M 1:138.

M. PINETORUM M 1:138.

MAHONIA Nutt, Gen Am 1:211 (1818).

= *Berberis* fide B 1:14.

M. FASCICULARIS DC, syst 2:19. B 1:15 as *B. pinnata* (in part = *B. aquifolium* fide IK).

M. GLUMACEA DC, syst 2:21. B 1:15 as *B. nervosa*.

MAIANthemum [Weber in] Wigg Prim Fl Holsat 14 (1780).

M. BIFOLIUM [DC] in Red Lil 4: t 216 f 2. B 2:162. = *convallaria* fide IK.

M. CONVALLARIA Weber lc, 15.

MALACHOCHAETE "Nees" ex B & H Gen 3:105 (1883). = *Malacochaete* Nees = *Scirpus* fide IK.

M. RIPARIA Nees & Meyen. B 2:218 as *Scirpus* Tatora.

MALACOMERIS Nutt. = *Malacotrix* fide IK.

M. INCANA Nutt, Am phil sc tr, ns, 7:438. B 1:434 as *M. incana*.

MAIREBANIA Neck, Elem 1:219 (1791). = *Arctostaphylos* fide IK.

M. ALPINA Desv, J bot 1:37. Br Z 1:30. Parry, Cal ac b 2:489. = *Arctostaphylos alpina* (fide IK).

M. UVA-URSI Desv, lc. = *A. Uva-ursi* fide IK.

Genus **MALACOTHRIX** De Candolle.

DC 7:192 (1838) A 1:253 d.

M. ALTISSIMA Greene, Cal ac b 1:195. P 2:21 d.

MALACOTHRIX CALIFORNICA DC.

DC 7:192. Ab 448. B 1:433. Par 155. A 1:254 d.

Abrams, Fl LA 448.

Hall, U 130.

Sacramento valley to Baja!

MALACOTHRIX CLEVELANDI A. Gy.

Hall, U 130.

Abrams, Fl LA 449. Gabriel mts.

Antioch, Cal; Cruz; CD! Guad.

B 1:433. P 1:205 Cedros. Br 1:203 Cruz. Ab 449. A 1:254 d.

M. COMMUTATA T & G, Fl 2:487. B 1:434 as *saxatilis*.

MALACOTHRIX COULTERI A. Gray.

Gray, Pl Fendl 113 (1849).

Type locality: "California."

Cruz; Mohave; Pt Loma, SD!; CD! Baja. G, Am ac mem, ns, 4:113. Br 1:203 Cruz ("fls light y"). B 1:432. A 1:254 d.

M. CREPOIDES G, Pac Ry R 12:49. B 1:436 as *Crepis cooperi*. = *crepis virens* fide IK.

M. FENDLERI G Pl Wright 2:104, Mex. B 1:434. NM.

M. GLABRATA G, syn Fl 1 (2):422. Cov 143.

Type locality: "Carson City," Nev, and "foothills of the Trinity mts, Nev; 4,500 ft alt."

- M. Californica* var. *glabrata* Eaton, Bot King Exp 201 (1871).
G. B 1:433.—"A form apparently destitute of wool, even when young."
Sierra Nevada; San Borgia, Baja (Br).
M. INCANA T & G Fl 2:486. P 1:91 Mig. Greene, Cal ac b 2:153; 405 Cruz. B 1:434. SD (Nutt.). Br 1:214 Rosa. SD (Nutt.); Cruz; Rosa.
M. INDECORA Greene, Cal ac b 2:152, 405 Cruz. P 1:91 Mig. Br 1:203. Z 1:140 as *foliosa*.
MALACOTHRIX INSULARIS Greene. Greene, Cal ac b 1:194. A 1:1 fdr.
M. OBUSA Bth 321. B 1:434, 436.
M. PAEVIFFLOEA G 5:163 = *xanti* fide B 1:433.
Benth Pl Hartw 321 (1849).
M. *Clevelandi* Gray, Bot Calif 1:433 (1876).
Greene, Erythra 1:137:—"even more common and luxuriant in middle California than in San Diego county."
M. SAXATILIS T & G, Fl 2:486. B 1:434. Par 77. Br 1:214 Rosa. SBar. Variety **TENUIFOLIA** A. Gray. Cruz; LA (Davidson).
Abrams, Fl LA 449.
Early glabrate or glabrous; sts slender, not succulent, 2-4 ft hl, with long and slender loosely-paniculate branches, bearing slender-pandunculate hds (of equal or smaller size); lvs narrowly lanceolate to linear, or on branchlets almost filiform. SBar-SD; Ar.
M. SONCHOIDES T & G, Fl 2:486. B 1:434. Nev; Ut; Nebr.
M. SONCHOIDES T, Stansb r 392. B 1:433 as *Torreyi*.
M. SQUALIDA Greene, Cal ac b 2:152, 406 Cruz. Br 1:203. Z 1:140 as *foliosa*.
M. TENUIFOLIA T & G, Fl 2:487. Par 77. P 1:91 Mig. B 1:434. Da 10. Greene, Cal ac b 2:405 Cruz.
M. TORREYI G 9:213. B 1:433. Z 2:231.
M. XANTI G 9:213. B 1:433. Cape San Lucas.
MALUS Tourn ex L Gen ed 1, 145 in syn (1737). Mill, Gard Dict ed 6 (1752). = *Pyrus* fide IK.
M. *COMMUNIS* Lam. B 1:188 as *Malus*.
M. *DIVERSIFOLIA* Decaisne, Mem Pom 155. B 1:188 as *P. rivularis*.
M. *RIVULARIS* Decaisne, lc. B 1:188 as *P. r.*
P 3:70.
Genus MALVA Linnaeus.
MALVA [Tourn] L syst ed 1 (1735). A 1:286 d.
M. *ANGUSTIFOLIA* Cav Diss 1:64 t 20. B 1:86 as *sphaeralcea* a. Bot Mag t 2839.
M. *BOREALIS* Wallm. in Liljebł Svensk Fl ed 3, 274. Eu. Br 1:208 Rosa. B 1:84. Z 2:344. Parish, Z 1:125. Br Z 1:113 Cat. = *parviflora* L. Guad. Asia.
M. *FASCICULARIS* Nutt. T & G Fl 1:235. B 1:85 as *Malvastrum* Thurberl.
M. *hederacea* Hook, Fl 1:107. B 1:87 as *Sida* h.
M. *MALACHROIDES* H & A, bot Beech 326. B 1:84 as *Sidalcea* m.
M. *MUNROANA* Dougl. bot reg t 1306. B 1:85 as *Malvastrum* M.
M. NICAENSIS All Fl Pedem 2:40. Z 2:343. Eu.
M. PAEVIFFLOEA L, Amoen 3:413. Da 3. Ab 247. Z 2:29, 343. Greene, W 3:155. SF, Baja: P 1:86 Mig. A 1:286 d.
Bloch, Erythra 2:163, note on medicinal use.
Greene, Cal ac b 2:392. Cruz, "less common than on the mainland, where it is called *M. borealis*; but it is a most distinct species."
M. *PLICATA* Nutt. T & G Fl, 1:227. B 1:87 as *Sida hederacea*.
MALVA FUSILLA Smith.
Abrams, Fl LA 247.—"Along Ballona creek near Mesmer."
A 1:287 d.
M. ROSA Z 1:109, 303.
MALVA ROTUNDIFOLIUM A. Gray.
Genus MALVASTRUM A. Gray.
G. Pl Fendl 21. A 1:287 d.
M. COCCINEUM G, mem Am ac, ns, 4:24. Ckl W 5:6.
M. COULTERI Wat 11:125. B 1:85.
MALVASTRUM DAVIDSONII Rob. Ab 249. A 1:287d.
MALVASTRUM DENSIFLORUM S. W. A 1:287d.
Num sm fls crowded in sessile hds, forming an interrupted spike. So Cal. CD.
MALVASTRUM EXILE A. Gray.
lvs r Colo river, bot 8. B 1:85. A 1:287d. Br. 1:202 Cruz.
Abrams, Fl LA 248.—Chatsworth Park.
Nev; Ut; Merced Co to SD! Quintin (Palmer). Cruz (Br). Usually decumbent.
MALVASTRUM FASCICULATUM Ge. Ab 249. Da 3, Er 4:68 LA; CD.
M. *FOLIOSUM* Wat 20:356. A 1:28 fdr, as *marubioides*.
Variety **PANNICULATUM** G 22:290:—"Copious and loosely paniculate fls, some of them rather slender-pedicelled." Baja!
MALVASTRUM FREMONTII Torr. T, ex G Pl Fendl 21 (1849). Cov 43. Da 3, Er 4:69. Gabriel mts above 4000'. Ab 248. B 1:86 as *Sphaeralcea* Lindheimeri.
Shrubby below, 1-2.5 m hl, densely soft-tomentose with long-rayed stellate pubescence; leaves roundish, shallowly or scarcely at all cordate, crenate-toothed, 2.5-5 cm broad; fls in axillary sessile or short-pedunculate clusters, interrupted spicate; bractlets about equaling the ex-lobes; cx densely lanate tomentose, its lobes triangular, acute, 4-5 mm long, mucronate with a more naked tip; pet rose color, about 1 cm long. *Malveopsis Fremontii* Green, Er 1:171 (1893).
Type locality: "interior of California."
MALVASTRUM MARRUBIODES D. R. B 1:85. A 1:28d.
M. MUNROANUM B 1:84. Z 2:228.
M. PALMERI Wat 12:250. B 2:437.
Stout, very densely stellate-pubescent, the branches somewhat flexuous; lvs broadly ovate, truncate or subcordate at base, 2 or 3' lg, somewhat 3-5-lobed, lobes obtusish, crenate-toothed; stipules lanceolate, conspicuous; fls nearly sessile in terminal clusters; bractlets linear-lanceolate, nearly = acuminate cx-lobes; pet y'ish rose-color, 1' lg; carpels rounded, somewhat pubescent. Obispo.

MALVASTRUM ROTUNDIFOLIUM A.G. G 3:333 (1868). B 1:85. CD (Parish). A 1:287 d.

Type locality: "sand hills at Fort Mohave," Ar.
Malveopsis rotundifolia OK 1:72 (1891).—Cov 74.

MALVASTRUM SPLENDIDUM Kell. K 1:65. Cur 1:133. A 1:29d. B 1:85, 2:437. Ab 249 as fasciculatum.

MALVASTRUM THURBERI A. Gray. Pl Thurb 307. B 1:85. Par 226 t. A 1:28d. Ab 249 as fasciculatum. SBar, Baja! Son. Cat.¹
 Variety **LAXIFLORUM** G 22:291. Greene, Cal ac b 2:392 Cruz, "only 2 bushes seen."
M. TRICUSPIDATUM G, Pl Wright 1:16. Baja (Br).

MAMMILLARIA. A genus of more than 300 species of strangely curious and beautiful plants, mostly natives of Mexico.

"Flowers about as long as wide; the tube campanulate or funnel-shaped. Ovary often hidden between the bases of the berry, naked. Seeds yellowish-brown to black, exalbuminous or nearly so. Embryo mostly short and straight, with extremely short cotyledons parallel to the sides of the seed.—Small, more or less globose or oval simple or caespitose plants, the spine-bearing areolae borne on cylindric, oval, conic or angular tubercles, which cover the body of the plant. Flowers form a distinct woolly or bristly areola at the base of these tubercles, fully open in sunlight, mostly only for a few hours."—E.

Subgenus **EUMAMMILLARIA**. Plants globose or elongated, with watery juice, and cylindrical or conical grooveless tubercles. Flowers borne usually in a ring near the top of plant, cup-shaped or expanded, as broad or broader than long. Sepals appressed. Stamens and styles shorter than the corolla.

Subgenus **COCHEMIEA**. Plants cylindrical, usually much elongated with watery juice and grooveless tubercles. Flowers mostly in a ring near the vertex several times longer than broad, scarlet, tubular, slender, somewhat curved, and oblique with spreading, unequal, petaloid sepals, so making the flower apparently double as in *Cereus flagelliformis*. Stamens and style red, exserted.

Subgenus **CORYPHANTHA**. Plants globose or elongated, often robust, with watery juice. Tubercles (in age) grooved on the upper side. Flowers as in *Eumammillaria*, but some at the extremity of the groove in the axils of young tubercles, usually near the vertex of the plant.

Section **GLANDULIFERA**. Cylindrical; mammae cylindrical, long, or oval and more or less globose; grooves bearing more or less conspicuous glands, the grooves often absent in young plants, the glands sometimes in the axils or at the base of the tubercles.

Subgenus **LACTESCENTES**. Plants depressed-globose, rarely a little elongated; juice milky; tubercles usually angular

and somewhat leathery. Flowers as in *Eumammillaria*, but mostly small.

MAMMILLARIA ALVERSONI Hort.

The Fox-tail cactus is of robust branching habit, densely covered with long stout straight spines, usually tipped with black or black half way down, shading into red, but often pure ivory white throughout. The large rose purple flowers are quite showy. The largest of some fifty plants was a cluster of six heads measuring 3 inches in diameter and about 8 inches high.

M. ARIZONICA E, B 1:244.

MAMMILLARIA ARMILLATA K Br.

"Stems somewhat attenuate, reaching 3 dm in height, 4-5 cm in diameter, usually in clusters of 3-12, from the base often branching above; tubercles somewhat leathery in texture; conical, somewhat angled; axils setose and sparsely woolly; radial spines 9-15, 7-12 mm long, the inner half whitish or grayish; centrals 1-4, 10-20 mm long, the lower one hooked and longer, all, and the outer part of the radials dark brown, yellowish or gray; flowers 1-2 cm long, scarcely spreading, flesh color; fruit red, clavate, 1½-3 cm long; seeds coriaceous, dull black, about 1 mm long, obliquely obovate, constricted above the more slender basal portion; surface covered with minute, not closely contiguous pits, the intervening spaces minutely wrinkled; hilum basal, narrow. San Jose del Cabo, Baja California. The name is in allusion to the dark bands which encircle the plant, giving it much the appearance of a raccoon's tail."—Katharine Brandegee, Zoe, 5-7 (Je 1900).

M. dioica Katharine Brandegee, *Erythraea* 5:115-6 (24 N 1897):—"M. Goodrichii of Engelmann, not of Scheer. Simple or caespitose, or occasionally branching above; beginning to flower at one inch or less, but attaining a height of 6-10 inches. Tubercles green or sometimes glaucous, cylindrical, often angular; axillae sparsely woolly in the growing part, bearing 4-15 setae, often as long as the tubercle; outer spines usually white, radiant, 11-22, covering the whole plant, centrals 1-4, the superior turned upward among the radials, the lowest longer and stouter and porrect, 8-15 mm. long; flowers 10-22 mm. long, yellowish-white, sometimes reddish, incompletely dioecious; petals lanceolate-acuminate, much longer and more spreading in the male flowers; fruit, like the flowers, borne in a circle near the top, clavate or oval, scarlet, 10-25 mm. long; seeds as in most of the

related species black, somewhat pyriform and minutely pitted. From San Diego a short distance north but southward to Cape St. Lucas always so far as known near the coast. Some plants brought by Mr. Anthony from San Juanico, Baja California, have the radial spines brown, and plants from San Jose del Cabo show colored rings of growth. It has been found as far as known on none of the islands excepting Todos Santos near Ensenada." (5-20)

M. DESERTI E. B 2:449.

MAMMILLARIA GABBII Engelm.

Cactus gabbi Coult., U S Na Hb cont 3:109:—"Globose, 5-10 cm in diameter, simple, tubercles cylindrical, slender, 12-14 mm long, with woolly axils; radial spines about 13, 5-8 mm long, lower ones longer and stouter, especially the latest ones pectinate; the central shorter, straight and robust; flowers small, yellowish-red; fruit unknown.—Type in Herb. Mo. Bot. Gard. Among rocks, from San Ignacio to Mission San Fernando, Lower California."

Near San Quintin bay, Baja Cal. (Orcutt).

Cactus brandegei Coult., U S Na Hb cont 3:76.

M. GOODRIDGEI Scheer, SHD 91, B 1: 243, Z 2:19, Par 26, P 1:265 San Benito Isl.; 203 Cedros.

M. GRAHAM E. B 1:244.

1 to 3 inches high, subglobose, simple or branching from the base; tubercles ovate, axils naked; radial spines in one series, 20 to 30 in number, 3 to 6 lines long, rigid and whitish, surrounding a stouter and longer hooked brown one. Flowers small, nearly 1 inch wide, reddish; berry oval, green, with small pitted seeds. The well-known "Arizona Strawberry" or small Fishhook Cactus of N. M., Arizona and Utah, rare in California.

M. HALEI Br. Z 2:12, 19.

"Caespitose, stems 8-10, about a foot high, 2-3 inches in diameter, straight, covered with dark-colored straight spines; tubercles short, rounded, woolly in the axils; spines 15-25, $\frac{1}{2}$ inch long, with 8-4 of the interior ones stouter and an inch long; flowers an inch long, vertical from the axils of young tubercles, scarlet; sepals all scarlet, petaloid; anthers scarlet, filaments exserted, yellowish, stigma scarlet; fruit red, clavate, $\frac{1}{2}$ inch long; seeds smooth. A handsome species, seen only upon Magdalena and Santa Margarita Islands, where it is very abundant."—Brandegee Cal ac pr sr 2, 2:161, t 6.

M. LENTA K Br. Z 5:194, A 1:92 fdr.

MAMMILLARIA MAINAE Br.

Hemispherical to ovate, simple, or sparingly branched from the base, reaching a height of 10 cm; tubercles glaucous, somewhat incurved, cylindric, becoming conical, 1-1 $\frac{1}{2}$ cm long, often bright red in the naked axils; radial spines, 10-13, yellowish, becoming white, slender, scarcely pungent, 6-10 mm long, the upper rather the shorter; centrals 1-3, both hooked,

rarely an additional upper one; lower central, usually the only one, nearly twice as long as the radials, stout and strongly hooked, porrect, brown below, blackish above, somewhat twisted; the second central when present, widely divaricate, ascending, weaker and shorter; flowers in crown at upper part of stem, pinkish-white or flesh-color, 1-1 $\frac{1}{2}$ cm in length, including the ovary; style whitish, deeply, few-lobed fruit red, globular, to obovate, shorter than the tubercles; seeds dull-black, punctate, a little more than 1 mm long, obovate, with narrowly-linear basal hilum. Named for the collector, Mrs. F. M. Main, who found it in Sonora, south of Nogales. It has been offered by dealers as *M. Galeottii* Scheid, to which it is not at all related."—Katharine Brandegee, Zoe, 5:1 (Ag 1900).

M. MISSOURIENSIS Sweet, Hort. Brit. 171, not Scheer. Stems usually simple, subglobose, about 3-5 cm. high, with cylindric-ovoid tubercles 12-14 mm. long, these slightly grooved; spines narrow; radials 13-17, whitish, bristle-like, 8-10 mm. long, straight; central 1, stouter, 10-12 mm. long, puberulent, or often o; flowers yellow to reddish, mostly 2.4 cm. long; stigmas 2-5; fruit subglobose, 6-8 mm. in diameter, scarlet; seeds subglobose, pitted, 1 mm. or less in diameter. Prairies of South Dakota, Colorado, Kansas, to Texas. (5)

MAMMILLARIA NICKELSAE K Br.

"Soon and densely caespitose, glaucous and often purplish, 4-6 cm high, hemispherical or globose; tubercles 10-12 mm long, becoming quite as broad and imbricated; spines 14-18 all radial, slender, at first yellowish with darker tips, later all gray; lower spines 8-10 mm long, the upper one-third longer, stouter, extending into the groove and forming a fascicle, the clustered fascicles making an upright tuft at the vertex; flowers 5-7 cm in full expansion, said to be bright yellow with red center; fruit unknown. Southward from Laredo, Texas. Named for the collector, Mrs. Anna B. Nickels, and offered in catalogues as *M. Nickelsii*. Evidently closely related to *M. sulcata* Engelm."—Katharine Brandegee, Zoe, 5: 31 (Ag 1900).

MAMMILLARIA OLIVIAE Orcutt.

Globose to ovate, 2 $\frac{1}{2}$ inches in diameter, 3 inches high, simple or rarely branched or caespitose; tubercles ovate, $\frac{1}{4}$ inch long, axils naked; radials 25-36, snowy white, slender, rigid, $\frac{1}{4}$ inch long, upper ones shorter; centrals 1-3, the lower one only an eighth of an inch long, erect, rigid, white or tipped with chocolate brown; the two upper centrals slender, white or rarely tipped with brown, 3 times as long, closely resembling the radials; lower central rarely longer, but occasionally even $\frac{1}{2}$ inch long, slender or flexuous, brownish and hooked upward—more frequently seen

on the lower outer tubercles of young plants; fruit scarlet, clavate, with small seeds. Type, Orcutt, No. 2602.—Of snowy whiteness from its numerous interlacing spines; dedicated to the author's life partner, who has accompanied him in thought on the mountains and deserts of Arizona, where this beautiful plant occurs.

Mammillaria petrophila.

Katharine Brandegee, Zoe 5:193 (Ag 1905), describes this as follows:—"Lactescent, attaining a height and diameter of 15 cm. but ordinarily a third less, tubercles short with broad base; areolae soon naked; spines chestnut color, becoming paler in age; radials 10, about 1 cm. long, central 1, sometimes 2, stronger, darker, and nearly twice as long, all porrect spreading; axils densely clothed nearly to the base of the plant with unusually large and long tufts of fulvous wool in which the fruits are nearly hidden; flowers bright greenish-yellow within and without, abruptly expanded above the ovary, 18-20 mm. long; petals and sepals hardly acute, lightly erose; stamens and 6-parted stigma the same color as the flower; berry small, roundish, color not noted; seeds reddish, smooth, less than 1 mm. in length. Collected by Mr. T. S. Brandegee in Sierra de la Laguna, and Sierra San Francisco in September and October, 1899, and later in the same general region by Dr. C. A. Purpus."

M. PHYLLOSPERMA E. B. 1:244.

M. PONDII P 1:268 Cedros.

"From a few inches to a foot high, simple or with a few oval or cylindrically elongated branches; growing parts tomentose; radial spines 20-30, white, slender; central 4 or 5, the longest more than an inch in length, rigid and strongly hooked, dark brown above the middle; flowers nearly 2 inches long, bright scarlet. Near *M. Goodridgei*, and differing from it in its large size and brilliantly colored large flowers. The plants were in flower in February. The species comes from the southwestern part of Cedros Island."—Greene Pittoria 1:268 (20 Mr 1889).

Fruit 20 mm long, 10 m in greater diameter, greenish, base imbedded in wool, remains of flower persistent, pulp slightly acid, greenish (May 6. 1897): seeds 0.5 mm in diameter.

MAMMILLARIA PRINGLEI K Br.

Katharine Brandegee, Zoe., 5:7, publishes this name (based on *Cactus Pringlei* Coulter), and states that it seems to scarcely differ from *M. Carretii*.

MAMMILLARIA RHODANTHA L.O.

Oblong or subcylindric, 30 cm high, 7.5-

10 in diameter, often bifurcate; tubercles conical, 12 mm long, 8 in diameter; with woolly axils; radial spines 16-20, bristle-like, white, the lower 8-10 mm long; central spines 6 or 7, rigid, whitish with black tip, 12 mm long; flowers rose-color, 12 mm broad; fruit 2.5 cm long, cylindrical. Mexico.

M. ROSEANA Z 2:19.

"Stems numerous from the root, spreading, curved, ascending, one-third to 2 mm long, 4 cm thick; mamillae arranged in quincunxial order, 15 mm apart, cylindrical, 12 mm long, white-woolly in the upper axils; pulviniae finely pubescent; radial spines 7-9 in number, 9-12 mm long, brown or straw colored, the single central spine 25 mm long, curved, hooked at the tip; flowers from the axils of the upper mamillae, 3 cm long; sepals and petals bright scarlet, joined into a tube, spreading at their tips, in several series; stamens and style scarlet; style branches 5-7; fruit scarlet, pyriform, 6-8 mm long; seeds black, pitted; cotyledons united, only a depressed line at their tips; albumen none.—Throughout the lower elevations of the Cape Region and northward to Calmalli. This cactus is one of the most showy of Lower California. Dr. Palmer collected it at La Paz and it is No. 189 of the list from that place in Contr. U. S. Herb. No. 3, catalogued by Mr. Rose, for whom it is appropriately named. The stems pendent from rocks at Comodonu are sometimes 6 feet long. This species and *M. Halei* of Magdalena and Santa Margarita Islands have similar flowers, fruit and seeds. The seeds of *M. Halei* were wrongly described as smooth; they are pitted in the same manner as those of this species."—Br Zoe 2:19 (Ap 1891).

M. Schelhasii Pfeiffer, AGZ 1838:274. Mexico. Simple (only 1 proliferous specimen found among the 500 plants examined), globose to rarely cylindrical, 3 inches in height and diameter (maximum height and diameter observed 6 and 4 inches): tubercles terete, bright green, half inch or less long, enlarged at base, axils woolly; areolae tomentose; radial spines 30, one-fourth inch long, white, radiant; centrals 5, and 2 upper equalling the radials in length, the 2 middle ones laterally divergent, slightly longer, the lowest half an inch long, dark brown, hooked upward; fruit clavate, scarlet, half an inch long, one fourth inch in diameter; seeds large, black, 11 in one fruit. Bisnagre of the natives; valued by them for its medicinal properties. Flowers rosy white to bright red. (20)

MAMMILLARIA SENILIS Lodd.

Rose, Contr U S Na Hb 5: 258 t 62.—"This seems to be the 'hikora rosapara' of which Lumholtz writes: 'Rosapara is a white and spiny hikora.' * * * It

must be touched with clean hands and only by people who are well baptized, for he is a good Christian, say the Christian Tarahumaris, and keeps a sharp eye upon the people around him."

MAMMILLARIA SETISPINA E.

"Cactus setispinus: fasciculate and ascending, simple or branched at base, the stems about 30 cm high and 3-6 cm in diameter, densely covered with remarkably long stout spines: tubercles short and broadly conical, with axillary wool: spines white, with black tips; radials 10-12, widely spreading, very unequal, 10-34 mm long, slender and flexuous; central spines 1-4, more rigid and much longer (20-50 mm), the upper ones straight, the lowest one longest and hooked (usually upwards) and often variously curved and twisted: fruit obovate and scarlet, 30 mm long: seeds black and pitted. Type, Gabb 15 in Herb. Mo. Bot. Gard. Rocky or gravelly soil, San Julio canyon, and in the vicinity of San Borgia, Lower California."—Coulter Cont U S Nat Hb 3: 106 (10 Je 1894).

MAMMILLARIA THORNBURI Orcutt.

Cylindrical, $\frac{1}{4}$ inch in diameter, usually 2-3 inches high, erect, with 8 or 9 spiral rows of tubercles, axils naked; 13-18 slender white or brown tipped radials $\frac{1}{4}$ inch long; usually 1 slender flexuous hooked central one-fourth to three-fourths of an inch long, tipped with brown; fruit clavate, scarlet, containing minute black seeds. Tips of tubercles olive green, base and axils and sunken portion of plant tinged with purple; radials usually 13, the upper sometimes the longest, often brown nearly to the base; central occasionally brown, usually the lower half white or yellowish, often hooked upward, but often twisted and turning in every direction. Plant proliferous at base, forming numerous offsets in the axils of the buried or lower tubercles; these quickly take root and usually soon sever connection with the parent, thus forming dense compact masses of old and young plants, usually 10-50—but in one, perhaps not exceptional case, I counted 110 distinct plants, in a cluster—all apparently originating from the tallest individual in the group. Occasionally a plant, from injuries sustained, becomes bifurcate or forms a number of aerial heads which remain permanently attached—but which usually form roots of their own and eventually survive the death of the parent. More than 1 central spine appears very rare, but 2 or three sometimes appear from the same small woolly areola, one or all hooked, of equal or varying length. The largest plant among over 1,000 was $1\frac{1}{2}$ inch in diameter and nearly a foot high! Type, Orcutt, No. 2583.—Arizona. Curiously the same plant was found a few days earlier than by the author by Prof. J. J. Thornber, and planted in the cactus garden of the University of Arizona, and this interesting addition to the cactus flora of the United States may therefore appropriately bear his name.

MAMMILLARIA TRICHACANTHA.

A remarkable species on account of its having hairy spines, introduced from

Mexico by F. de Laet (MfK 1904, 45, f). **MAMMILLARIA UNISETA.**

Globose, about 2 inches in diameter, simple, somewhat depressed at summit: tubercles 4-angled, dark green: spines 6, usually 1- $1\frac{1}{2}$ lines long, at first black, finally gray: flower and habitat unknown (MfK 1904, 128).

MAMMILLARIA VENUSTA K Br.

"Simple, becoming caespitose in clusters of, in extreme cases, as many as 40; heads 2-4, very rarely, in center of large clusters, 6 cm high, a little less in diameter; tubercles thick and short, concave at the end, greenish, purplish to nearly white, glaucous; axils only slightly woolly, soon marked; radial spines, 9-15, stout, 6-12 mm long; centrals typically solitary, 10-15 mm, sometimes 2 or 3, in a single specimen 4, protract-spreading, the 3 upper very short; flowers about 4 cm in diameter, rose-color, widely spreading, tube very short; petals lanceolate acute, recurved-spreading; style-branches 5, apparently rosy brown; fruit $1\frac{1}{2}$ -12 cm long, scarlet, linear, circumscissile some distance above the base, nearly dry; seeds oblong-ovate, rather less than 1 mm long, constricted above the basal portion, which is half as long and nearly as wide as the upper; surface dull, minutely pitted, the pits much obscured by delicate intervening striae; hilum basal, large and triangular.

"Collected by Mr. T. S. Brandegee in the vicinity of San Jose del Cabo, Baja California, in Sept. 1890. (No. 240, M. Goodrichii, of 'Flora of the Cape Region'); again Sept. 1893, and for the third time last year in numerous living specimens. The spines are from pure white, barely tipped with brown, to dark brown, whitish only near the base. The flowers, which appear in September, hide the whole plant, and it is of such low growth as to look like a beautiful cluster of flowers springing from the sand. The fruit appearing in winter is nearly dry and falls very readily when ripe, leaving most of the seeds in the axillary cup. It is the only circumscissile mammillaria known to me."—Katharine Brandegee, Zoe, 5:8 (Je 1900).

MAMMILLARIA VETULA Mart.

M. vivipara Haworth, Suppl. Pl. Succ. 72. A low plant, simple, or usually profusely proliferous and caespitose: 12-20 stiff, white, often purple, radial spines, 3-4 lines long, covering the entire plant; centrals 4, 3 pointing upward, one the stoutest and shortest downward, rarely less, often more, as many as 8, usually 4-6 lines long; flowers central, an inch and a half long and broad, when fully expanded, with 30 or more delicately fimbriate recurved sepals and 25-40 narrow acuminate purple petals, which are naked or fimbriate at base; filaments whitish or purplish, almost from the

base of the tube; anthers orange; style long-exserted, with 5-10 linear pale or purple stigmata, which are pointed with a short mucro: fruit pale green, juicy, slightly acid, full of yellowish-brown seeds. (10)

MAMMILLARIA WILCOXI Tourmey.

Usually simple, depressed-globose; 14-16 slender, subulate whitish radials 10 mm long; solitary hooked central brownish; axis naked. Fruit (16 O 1896) flesh color faintly tinged with carmine, the black seeds showing through the transparent epidermis. Near Congress and Benson, Arizona (Orcutt).

MARAH K 1:38, Pacific 6 Ap 1854. P 1:1 as Mara.

M. MURICATA P 1:1, 3 as Echinocystis mara.

M. MINIMA K 2:18. Cur 1:138 as *Elatium minimum* Wat.

M. MURICATA K 1:38. Cur 1:138 as *Megarrhiza Marah* Wat.

MARICA Ker-Gawl, bot mag t 654 (1803).

M. CALIFORNICA Ker-Gawl, bot mag t 983. B 2:141 as *Sisyrinchium* c.

MABISCUS Gaertn, Fruct 1:11 (1788); Vahl, Enum 2:372 (1806).

M. FLAVUS Vahl, Enum 2:374. B 2:216 as *Cyperus flavamariscus* Griseb.

M. HAENKEI Presl, Rel Haenk 1:181. B 2:216 as *Cyperus flavamariscus*.

MANZANITA.—See *Arctostaphylos*.

Genus MARRUBIUM Linnaeus.

Per mostly woolly herbs, with dentate rugose lvs, and sm fls in dense axyl clusters: ex tubular, 5-10-nerved, regularly 5-10-toothed, the teeth acute or aristate, spreading or recurved in fr: cor-limb 2-lipped, upper lip erect, entire or emarginate, lower spreading, 3-cleft, its broader middle lobe com emarginate: sta 4, didynamous, included, the posterior pair shorter; anth 2-celled, sacs divergent: sty 2-cleft at summit, lobes sh: ova deeply 4-lobed: nutlets ovoid, smooth. Hoarhound.

MARRUBIUM VULGARE Linn.

L sp pl 583. Ab 341. B 1:605. Par 42. P 1:92 Mig. Z 1:123, 2:233, 369. Da 14. Er 1:98 LA.

Ab 341. Da Er 1:98, LA.

Sts stout, tufted, erect, w-woolly, 3-10 dm hi; lvs roundish-crenate, except at the cuneate, truncate or subcordate base, petioled, w-woolly beneath, g above, 2-4 late.

Hoarhound; hoary, bitter, common and widely naturalized in California, is much used for coughs and lung diseases.

Genus MARSILIA Linnaeus.

MARSILIA VESTITA H. & G.

MARTYNIA Houst ex L, syst ed 1 (1735).

MARTYNIA ALTHEAEFOLIA Benth.

Bot Sulph 37, CD (Parish 1409).

M. PROBOSCIDEA G lox, obs 14. B 1:587. Unicorn plant, cult. Greene, Er 1:22.

MARUTA Cass in sc philom b (1818) 167. = *Anthemis* fide IK.

M. COTULA Cass, DC 6:13. B 1:401 as A: c.

M. FAETIDA S F Gray, Nat Arr Brit pl 2:456. = A: cotula.

M. VULGARIS Bluff & Fingerh, Comp Fl Germ 2:392. = A: cotula fide IK.

Genus **MATRICARIA** Linnaeus.

Ann or per herbs with alt lvs dissected into filiform or nar'y linear seg, and discord or radiate peduncled hds: inv hemispheric, its bracts imbricated in few series: receptacle conic or elongated, naked: rays in our 0: disk-fls y, perfect, fertile, 4-5-toothed: ak 3-5-ribbed: pap a coroniform border or 0.

M. CORYMBOSA Desr in Lam Encyc 3: 734. Z 2:360. = *chrysanthemum* c fide IK.

MATRICARIA DISCOIDEA DC.

"Said to be used in California as a domestic remedy for agues and bowel complaints" (Watson, Bot. Cal. 1. 401.)

Unalaska; Cruz; Guad. Used for bowel complaints and agues.

Da 10. Z 1:401. Br 1:203 Cruz. Z 2:76, 360. K Br, Z 1:82. "Appearance of being introduced." Bloch, Er 2:40, 163, notes medicinal value. Manzanilla. Ab 435 as *matricarioides*.

Ann, glab; sts lfy, becoming much branched, oft more or less decumbent. 1-3 dm hi; lvs 2-3-pinnately dissected into linear acute lobes; hds num, 6-8 mm broad; inv-bracts oval or oblg, g broad w scarious margins, much sh'ter than the ovoid disk; ak oblong, faintly nerved; pap an obscure crown.

M. INODOREA Lam Fl Fr 2:136. = *chrysanthemum corymbosum* fide IK.

Variety **ALIGULATA** Z 2:76, 360.

M. MATRICARIOIDES Porter. Ab 435. = *discoidea*.

M. OCCIDENTALIS Greene, Cal ac b 2: 150. Parish Er 3:62, SBer—"apparently recently introduced." KBr, Z 1:82, SF; 2:76, 360.

M. TANACETOIDES F & M, Ind Sem Hort Petrop 7:52. B 1:401 as *discoidea*.

MAURANDIA Orteg, Hort Matr Dec 31 (1797).

M. ANTIRRHINIFLORA Willd, H Berol t 83. B 1:551 as *Antirrhinum maurandioides* G. Bot Mag t 1643.

M. JUNCCEA Bth, bot sulph 41. B 1:551 as *Antirrhinum juncceum*.

M. STRICTA H & A, bot Beech 375. B 1:550 as *Antirrhinum strictum*.

MECONELLA Nutt, T & G Fl 1:64. = *Platystigma* fide IK.

M. CALIFORNICA T. A 1:97 as *Platystemon oreganus*. P 5:141, 142.

M. COLLINA P 5:141, 143.

M. OCTANDRA P 5:141, 142.

M. OREGANA P 5:141. A 1:97 as *Platystemon Oreganus*.

Genus MEDICAGO Linnaeus.

Tourn ex L, Gen ed 1, 225 (1737).

A 1:310 d.

MEDICAGO APICULATA Willd.

Abrams, Fl LA 210. LA; Pasadena.

Willd, sp pl 3:1414. A 1:310 d. = *denticulata* fide IK.

MEDICAGO DENTICULATA Willd.

Davidson, Erythra 1:58, LA Co.

Abrams, Fl LA 210. Everywhere common.

DC 2:176. Greene, Cal ac b 2:394, Cruz. Da 5. B 1:133. Par 138. P 1:87 Mig. A 1:310 d.

MEDICAGO LUPULINA Linn.

L, sppl 779. B 1:133. A 1:310 d. Abrams, Fl LA 211. Lytle creek.

M. MACULATA Willd, sp pl 3:1412, Eu. Z 2:75. Par 138.

M. MARGINATA Willd, Enum Hort Berol 802. Z 2:75, 347. = orbicularis fide IK.

MEDICAGO ORBICULARIS All.

Abrams, Fl LA 211. Santa Ana (Helen D. Geis).

All, Fl Pedem 1:314. A 1:310 d.

M. SATIVA L, sppl 778. P 1:87 Mig. Da 5. Ab 210. B 1:132. A 1:310 d, 377 d. **MESEEA** Gaertn Fruct 1:344(1788. Gomphia fide IK.

MESEEA Hedw. Moss.

M. LONGISETA Hedw. B 2:399.

M. TRISTICHA Bruch & Schimp. B 2:399, Wash.

M. ULIGINOSA Hedw. B 2:399. Nev, Wash, Colo, Eu.

MEGALODONTA P 4:271.

M. BECKII P 4:271.

M. NUDA P 4:271.

M. REMOTA P 4:271.

MEGAREHIZA T & G Pac Ry R 6:74 Nomen (1857); 12 (2):61 (1860). = Echinocystis fide IK.

M. CALIFORNICA T, Pac Ry R 6:74. = E: fabacea fide IK. (Wat B 1:241 = E: macrocarpa in part fide IK.)

M. GUADALUPENSIS Wat 11:138. B 1:242. = E: g, fide IK.

M. MARAH Wat 11:138. B 1241. P. 1:3 as E: m. Lyon, bot gaz 11:333. Parish, Z 5:119 ("probably plant of Catalina Isl. = E: macrocarpa"). = E: marah fide IK.

M. MURICATA Wat 11:138. B 1:241. = E: Watsoni fide IK.

M. OREGANA T, Pac Ry R 6:74. B 1:241. P 1:3 as E: 0.

MELAMPodium PERFOLIATUM HBK, Nov Gen et sp 4:274. Mex. LA, a roadside weed (Parish). Da 9, Er 1:60 LA. Parish, Z 1:59. "Plentiful in LA."

Mexico; LA, a roadside weed (Parish). Da 9.

MELANDRIUM Raehl, Deutschl Fl, ed 2, 274 (1812). = Lychnis fide IK.

M. BOLANDERI Rohrb in Linnaea 36: 254. B 1:64 as Silena Hookeri.

M. CALIFORNICUM Rohrb, lc, 252. B 1:64 as Silena C.

M. HOOKERI Rohrb, lc, 254. B 1:64 as Silena H.

M. LACINIATUM Rohrb, lc, 252. B 1:64 as Silena l.

MELAREHIZA K 1:38. = Wyethia fide IK.

M. INULOIDES K 1:38. Cur 1:139 as W: helenioides.

MELIA AZEDARACH Linn.

Genus MELILOTUS Tournefort.

Toprn ex Hall Enum Stirp Helv 2:587 (1742). A 1:310.

MELILOTUS ALBA Lam.

B 1:132. Z 2:383. Da 5. Par 165. A 1:310 d.

Davidson, Erythra 1:58. LA Co. Parsons, W Fls Cal 165.

Abrams, Fl LA 211.

MELILOTUS INDICA All.

Par 165. Da 5. Ab 211. A 1:310 d.

All, Fl Ped 1:308 (1785).

Type locality: Indian.

Davidson, Erythra 1:58, LA Co.

Parish, Zoe 1:125.

Abrams, Fl LA 211. Common.

Parsons, W Fls Cal 165.

Mellilotus parviflora, Less, of Bot Cal. Trifolium Mellilotus indica L, Sp Pl

2:765 (1753).

M. OCCIDENTALIS Nutt, T & G Fl 1:321. B 1:132 as parviflora.

M. OFFICINALIS Willd. B 1:132.

MELILOTUS PARVIFLORA Desf.

See Mellilotus indica All.

Fl Atl 2:192. P 1:87 Mig. Par 165. B 1:132. Z 2:347. Br 1:209 Rosa. Greene, Cal ac b 2:394 Cruz. A 1:310 d.

MELOTHRIA L, Coroll Gen 1 (1737).

M. PENDULA L, sp pl 35. T & G Fl 1:541. B 1:240, 2:449. Atlantic states to So Cal.

MENGEA Schau in Nov act Nat cur 19: suppl 1:405 (1843). = Amaranthus fide IK.

M. CALIFORNICA Moq in DC 13 (2): 270. B 2:42. = A: c fide IK.

Genus MENODORA Humb. & Bonpl.

Low woody plants: lvs sessile, not rarely alt; fls showy, terminal, com somewhat cymose; cx with a sh turbinate tube, 5-15 nar lobes from its truncate border; cor campanulate, funnel-form or almost rotate, com 5-lobed, lobes imbricated in bud: sta 2 (or 3), on cor-tube: anth oblg or linear: sty slender: stig obtuse or 2-lobed; cap didymous, com 2-parted, membranaceous at maturity, circumscissile, upper part of each lobe falling as a lid, leaving the scarious membranaceous base: sds 2 in each com, ascending, large, with a fleshy or when dry spongy outer coat, destitute of albumen.

MENODORA SCABRA A. Gray.

Baja (Or 926); Colo; N. M.

Ar. B 1:472.

Variety **GLABRESCENS** G, Wat Cat pl Wheel 15. B 1:472 as scoparia.

M. SCOPARIA E. B 1:471. Mex.

Canilles! Arizona; SD Co.

Shrubby at base, 2-3° hi, paniculately branched, glab and smooth or nearly so: lvs obovate-lanceolate, entire; uppermost reduced to sm subulate bracts; lower oblg or obovate and sh-petioled: cx-lobes 5-6 (rarely with intermediate ones making 8-10), about as lg as cor-tube; cor y, almost rotate; cap divisions globose. **MENODORA SPINESCENS** A. Gray. G 7:388. B 1:471.

Type locality: "canyons and hillsides, southeastern part of the state of Nev."

Shrubby, 2-4° hi; branches rigid, divaricate, spinose, obscurely puberulent: lvs reduced to minute com alt scales or sm spatulate-linear, and fascicled on sh fig branchlets: fls sh-ped or nearly sessile in efascicles: lobes of deep-parted cx 5 or rarely 6, a little sh'er than the funelform light y cor: fl sh'er than anth: divisions of cap almost distinct, divaricate, obovoid.

Providence mts, Cal; Nevada.

Genus MENTHA Linnaeus.

Syst ed 1 (1735). A 1:277 d.
MENTHA CANADENSIS Linn.
 L, sp pl 577. A 1:277 d. Da 14. B 1:591.
 Cov 174, Yosemite. Ha 108.

Hall, U 108.
 Type locality: "in Canada."
 Coville, CNH 4:174. Yosemite valley.
 Variety **GLABRATA** Bth. A 1:277.
 Comondu, Baja (Ber). Atlantic to
 Pacific, Canada to Mexico.

MENTHA PIPERITA L.
 L, sp pl 576. A 1:235 d. Ab 348. Da 14.
 B 1:592.

Abrams, Fl LA 348. LA.
 Davidson, Pl LA Co. 14.
MENTHA SPICATA L.
 L, sp pl 576. A 1:277 d. Ab 349. = M.
 sylvestris fide IK.

MENTHA VIRIDIS L.
 M. **SYLVESTRIS** L, sp pl ed 2, 804.
MENTHA VIRIDIS Linn.

Sp Pl ed 2, 804. A 1:277, 304. B 1:592.
 See *Mentha spicata* L.

Genus MENTZELIA Linnaeus.

Erect ann: lvs in age brittle, adhering very tightly to clothing by means of barbed hairs: fls terminal, solitary or cymose. sm or showy: sty 3, more or less united into 1: cap dehiscent at summit, few- to many-seeded: sds flat; endosperm scanty. Named in honor of C. Mentzel, a German botanist of the 12th century.

M. ADHERENS Benth.
 Magdalena Island (Br).
MENTZELIA AFFINIS Greene.
 P 2:103. Ab 256. Sanders, Er 1:158 as a
 menacing weed, 3° hi.

Sts stout, 3-6 dm hi, simple and lfy below, widely branching above; lvs lanceolate, deeply sinuate-pinnate; fls scattered, 12 mm broad; ex-lobes attenuate, subulate, 4-6 mm lg; fil all filiform; cap 2.5 cm lg, almost linear, hispid with sh stiff hairs; sds prismatic, with grooved angles.

MENTZELIA ALBICAULIS Dougl.
 Dougl ex T & G Fl 1:534 (1840). Cov
 107. B 1:235.

Slender, ¼-1 ft hi or more, lvs linear-lanceolate, pinnatifid with num narrow lobes, the upper lvs broader and often lobed or toothed at base only: fls mostly approximate near ends of branches: ex-lobes 1½ li long, a little sh'tr than the spatulate or obovate pet; fil not dilated: cap linear-clavate, 6-9' lg; sds num, rather strongly tuberculate, irregularly angled with obtuse margins, less than ½ lg. Ore, Colo, NM, SBr!

Mentzelia Veatchiana K 2:29 f 28.
Bartonia albicaulis Hook, Fl Bor Am 1: 222 (1834).

Type locality: "arid, sandy plains of the river Columbia, under the shade of *Purshia tridentata*."

Variety **GRACILENTA** Wat, bot king 114. B 1:236 as sp.
 Variety **INTEGRIFOLIA** Wat. A 1:166 s.
M. ASPERA L. B 1:235, 2:448. Son, Ar, Baja.

M. CONGESTA T & G Fl 1:534. Cov 107. Ha 96. B 1:236. Ore, Nev.

Type locality: "Rocky mts, on Lewis

river."

Habit and foliage of albicaulis; 1° hi: fls clustered at ends of branches, with conspicuous broad-toothed bracts, membranaceous at base: ex-lobes 1½-2" lg: pet bright or, 3-6" lg: fil all filiform: cap clavate, ½' lg: sds irr angled, minute-tuberculate, near 1" lg.

M. CORDATA K 2:33, Hesperian O 1860, f. Cur 1:137 as *Eucnide* c. P 1:202 Cedros.

M. CROCEA K 7:110. Cur 1:137 as *Lindleyi*.

M. DENSA P 3:99.

M. DISPERSA Wat 11:137. B 1:236. Da 6. A 1:166 s.

M. GRACILENTA T & G Fl 1:534. B 1: 236. Da 6. Ha 96. Ab 256.

Baja (Or 101); Pt. Loma, SD (Or); to the Sacramento valley; Nevada.

Sparingly branched or often simple, 1-1½° hi; lvs narly oblg in outline, pinnatifid into broadly linear lobes or only coarsely sinuate-toothed; upper lvs sometimes disposed to be ovate or lanceolate, somewhat sharply cleft or entire; fls clustered at summit; lobes 2-5" lg; pet obovate or oblanceolate, rounded or retuse at apex, 4-6" lg, y fil dilated and somewhat united at base; cap clavate to obovate, ½-¾' lg; sds in 3 rows, angled, minutely tuberculate, two-thirds li lg.

M. HIRSUTISSIMA Wat.

Calamujuet, Baja (Br).

M. HISPIDA Willd. Magdalena Isl (Br).
M. INTEGRIFOLIA Rydb. Ab 256. A 1: 166 d.

MENTZELIA INVOLUCRATA S. Wat.
 A 1:40 fdr.

M. LAEVICAULIS T & G, Fl 1:535. B 1: 237. Da 6. Er 1:13. Ab 256. A 1:166 d.

M. LINDLEYI T & G, Fl 1:533. B 1:236. 2:448 Par 172 t.

M. LUTEA. P 3:99.

M. MICRANTHA T & G Fl 1:535. B 1: 236. Er 1:12. Br 1:210 Rosa. Greene, Cal ac b 2:398 Cruz. Ab 256. Da 6. A 1:166d.

M. PAEVIOLORA M 1:138.

M. PECTINATA K 3:40. Cur 1:138 as *gracilenta*.

M. TOREYI G 10:72. B 1:237.

MENTZELIA TRICUSPIS A. Gray.

G. Am nat 9:271 (1875). B 1:237, 2:448. Cov 108.

Type locality: "from the desert districts south of St. George," Utah.

Apparently ann, 6 i hi or more, rather stout: lvs oblong-lanceolate, 2 or 3 i lg, acute or acuminate, coarsely sinuate-toothed, attenuate at base to a petiole, the upper ovate and sessile: fls sessile on the short branches: ex-lobes ½ i lg; pet broadly spatulate, light y, 12-15" lg; fil very num, sh'tr than ex. linear, somewhat dilated above and marked by a transverse orange band, and prolonged into 2 lateral linear cusps nearly equaling the oblong-linear anth: sty stout and rigid, 3 cleft, equaling sta: cap ½ i lg. Ft Mohave (Cooper); CD.

M. URENS G 10:71. Am nat 9:271. B 1: 238 as *Eucnide* u.

M. VEATCHIANA K 2:99 f 28. B 1:236 et Cur 1:138 as *albicaulis*.

MENYANTHES [Tourn] L, syst ed 1 (1735).

M. CRISTA GALLI Menz et Hook bot misc 1:45 t 34 (1830). P 3:81.

M. PUMILA Dougl ex Griseb Gen et sp Gent 338. =Hesperochiron Californicus fide IK. P 5:50 s.

M. TRIFOLIATA L, sp pl 145. B 1:485. P 3:81. Z 2:4, 364.

MENZIESIA Smith, Pl Ic Ined t 56 (1791).

M. ALEUTICA Spreng syst 2:202. M 1:1.

M. EMPETRIFORMIS Smith, bot mag t 3176. B 1:456 as *Bryanthus* emp.

M. FERREUGINEA Smith Ic ined t 36. B 1:457. Ore.

M. GLABELLA G, syn Fl 2 (1):39. P 3:75.

M. GRAHAMI Hook Fl 2:40. B 1:456 as *Bryanthus* empelrifomis.

MERIMEA Cambess in A st Hill Fl Bras Mer 2:160 t 107 (1829). =Bergia fide IK.

M. TEXANA Hook, Ic t 278. B 1:80 as B: T.

MEEHANIA Sw, Fl Ind Occ 2:823 t 15 (1800).

M. BOLIVIENSIS Cogn. Z 1:63. So Am.

MERTENSIA Roth, Catalect 1:34 (1797).

M. ALPINA Don Gen syst 4:372. B 1:523. Parry, Wyo 14.

M. ARIZONICA P 3:197.

M. BAKERI P 4:90.

M. BRACHYLOBA P 4:90.

M. CILIATA DC B 1:523 as *sibirica*. P 4:86.

M. DENTICULATA DC, B 1:523 as *sibirica*.

M. FENDLERI G, Am J sc sr 2, 34:339. P 4:86. =lanceolata fide IK.

M. FRANCISCANA Heller, T cl b 26:549. P 4:86.

M. FUSIFORMIS P 4:89.

M. LANCEOLATA DC 10:88. P 4:90.

M. LINEARIS P 3:197.

M. LONGIFLORA P 3:261.

M. MARITIMA S F Gray, Nat Arr Brit Pl 2:354. B 1:523.

M. OBLONGIFOLIA G Don, Gen syst 4:372. P 4:90.

M. PANICULATA Dougl. B 1:523. P 4:86. Parry, Wyo 7.

M. PAPILLOSA P 3:261.

M. PILOSA DC 10:90. P 4:88.

M. PLATYPHYLLA Heller, T cl b 26:548. P 4:89.

M. POLYPHYLLA P 4:87.

M. PRATENSIS Heller, T cl b 26:550. P 4:86.

M. PUNCTATA. P 4:88.

M. STRIGOSA P 4:88.

M. SUBCORDATA P 4:89.

M. STEIRICA Don, Gen Syst 4:319. B 1:523. 2:468. P 4:89. Z 2:165. Par 340. Parry, Wyo 13.

M. STOMATECHOIDES K 2:148. Cur 1:143 as *sibirica*. P 4:86 as a good sp.

MESADENIA Rafin, Loud Gard Mag 8:247 (1832). =Senecio fide IK.

M. ATEPLICIFOLIA Rafin, New Fl Am 4:79. P 3:182. =S: a, fide IK.

M. DIVERSIFLOEA P 3:182.

M. FLORIDANA P 3:183.

M. LANCEOLATA Rafin, New Fl Am 4:79. P 3:183. =S: Boscianus fide IK.

M. OVATA Rafin, lc, 79. P 3:182. =S: Walteri? fide IK.

M. PLANTAGINEA Rafin lc. P 3:183.

M. BENIFORMIS Rafin lc. P 3:182. =S: Muehlenbergii fide IK.

Genus **MICRAMPELIS** Rafinesque.

Mostly climbing herbs, with branched tendrils, lobed divided or angled lvs, and sm w or g'ish-w mon fls: ex-tube campanulate, 5-6-toothed; cor very deeply 5-6-parted: sta 3 in stam fls; anth more or less coherent: pist fls with a 2-4-celled ova; sty very sh; stig hemispheric or lobed: fr fleshy or dry at maturity, densely spiny, 1-2-celled, dehiscent at apex.

MICRAMPELIS FABACEA Ge.

P 2:129. A 1:167. Da 6.

Echinochystis fabacea Naudin.

M. MACROCARPA P 2:129. Cov 109.

260. Ha 122. Ab 385. A 1:167 d.

Synonymy: Echinocystis macrocarpa Greene. Megarrhiza californica Wat in part.

MICRAMPELIS GUADALUPENSIS Ge.

Echinocystis guadalupensis Ge.

P 2:129 (Megarrhiza guadalupensis Wat 11:138).

M. LEPTOCARPA Greene. A 1:167 fdr.

M. RUSBYI Greene, Er 1:138 based on macrocarpa Rusby, Torr cl mem 3:41 (1893), non Greene.

MICROCALA Hoffm & Link, Fl Port 1:359 (1806).

M. QUADRANGULARIS Griseb in DC 9:63. B 1:480.

Genus **MICROMERIA** Benth.

Erect branching or trailing per aromatic herbs, with sm pedicelled fls solitary in axils of lvs: ex oblong or tubular, about equally 5-toothed and 12-15-nerved; cor distinctly bilabiate, naked within, upper lip erect, entire or emarginate; lower spreading, 3-parted: sta 4; fil arcuate-ascending; upper pair longer; anth 2-celled.

M. BARBATA F & M, Ind Sem Petrop 8:67. B 1:595 as Douglasii.

M. CALIFORNICUS B 1:517 error for Micropus c.

M. CHAMISSONIS Greene. Ab 346. (M. Douglasii Bth).

Sts slender, trailing or creeping, 3 dm lg or more, herbage slightly pubescent; lvs round-ovate, crenate, glandular-punctate, 2-5 cm lg or less; petioles 4-6 mm lg; fls about 8 mm lg ex minutely hispidulous; cor pubescent without. Yerba Buena, valued as a blood purifier by native Californians. LA. SD!

MICROMERIA DOUGLASII Bth.

"Yerba Buena." Valued as a blood purifier.

Lab Gen et sp 372. B 1:595. Da 14. Z 2:368. Par 64 t.

M. PURPUREA G. B 1:595.

MICROPUS L, Gen ed 1, 359 (1737). A 1:188 d.

M. ANGUSTIFOLIUS Nutt, Am phil sc tr, ns. 7:339. B 1:335 as californicus.

M. CALIFORNICUS F & M, Ind Sem Petrop 1835, 42. Greene, Cal ac b 2:402 Cruz. Ab 408. Da 8. A 1:188 d.

Variety **SUBVESTITUS** G, B 1:335.

Genus **MICROSERIS** Don.

D Don, phil mag 11:388 (Ap 1832). A 1:254 d.

M. ACUMINATA Greene, Torr cl b 10:88. P 5:4.

M. ALICIAE P 5:8.

- M. ANOMALA Wat 22:475, 24:84.
Br, 1:203 Cruz; Z 1:126 as linearifolia.
- M. APHANTOCARPHA** Sch Bip in Pollichia 22-24:308 (1866). B 1:425. Greene, Er 1:7. P 5:9.
Variety **TENELLA** Da 10. Ab 444.
Scapes usually decumbent at base, 15-35 cm hi; lvs entire or pinnatifid; inv calyculate; ak slender, 3-4 mm long, oblong - clavate; paleaeovate, scarcely 1 mm long; bristles 6-8 mm long, slender, fragile or decid.
Abrams, Fl LA 444. Monica (Davidson).
- M. ATRATA** P 5:14.
M. ATTENUATA Greene, Torr cl b 9: 111. P 5:4, 7, 10, 11.
M. BIGELOVII Sch Bip in Pollechia 22-24:308. B 1:425. P 5:11, 12, 13 s.
M. BOREALIS Sch Bip, lc, 310. B 1:440 as Aparigidium b.
MICROSERIS BREVISETA Greene. P 5:8, 12. A 1:1 fdr.
M. CALLICARPHA P 5:10.
M. CAMPESTRIS P 5:15.
M. CASTANEA P 5:13.
M. COGNATA P 5:15.
M. CONJUGENS P 5:7.
MICROSERIS CYCLOCARPHA A. Gray. Sch Bip lc 308. B 1:426. Ab 445. A 1: 254 d. = Douglasii fide IK.
M. DOUGLASII Sch Bip lc 308. B 1: 426. P 5:5, 6, 9.
MICROSERIS ELEGANS Greene. G, syn Fl 1 (2): 419. Br 1:203 Cruz. A 1:2 d.
M. FURFURACEA P 5:9.
MICROSERIS INDIVISA Greene. Greene, Er 1:7. A 1:255 d.
M. INSIGNIS P 5:13.
M. INTERMEDIA P 5:12.
M. LACINIATA Sch Bip, lc 309. B 1: 424.
M. LEIOSPERMA P 5:10.
M. LEPTOSEPALA G 9:209, 19:64. B 1:424.
M. LEUCOCARPHA P 5:7.
MICROSERIS LINDLEYI A. Gray. G 9:210. Br, Z 1:114 Cat, 126, 127 (cites as synonymy M. Parryi, Calais Parryi, Kelloggii, Clevelandii et pluriseta Greene). B 1:426. Da 10. SF, Baja, SD (Or 1053). Br 1:203 Cruz, 214 Rosa. Synonymy: Calais Lindleyi DC 7:85. See Uropappus Lindleyi.
MICROSERIS LINEARIFOLIA A. Gray. B 1:427. Da 10. Br 1:213 Rosa. Z 1:126. Ha 130. Br Z 1:114 Cat, 120, 127 (cites anomala et macrochaeta as synonyms). See Uropappus linearifolius.
M. MACROCHAETA G, Syn Fl 2 (1): 418. Br 1:213 as form of linearifolia. B 1:427.
SF (Bigelow); SD (Nutt.); Idaho; Oregon; Cruz.
Like Microseris Lindleyi in size and aspect ak shorter and more attenuate at summit; palea short, only a third as long as the awn, and cleft to the middle. Ore to SD, Id, Cruz.
Calais macrochaeta Gray, Pl Fendl 112. Greene, Cal ac b 2:49.
M. MARITIMA P 5:16.
M. MAJOR Sch Bip, lc, 308. B 1:424.
M. MELANOCARPA P 5:6, 7.
M. NIGRESCENS M 1:8.
M. NUTANS Sch Bip, lc 308. B 1:423. Z 2:163.
M. OBTUSATA P 5:16.
M. OLLIGANTHA P 5:9.
MICROSERIS PARISHII Greene. P 5:8, 11. A 1:2 fdr.
M. PARRYI Sch Bip, lc 309. B 1:425. Br 1:126 as Lindleyi.
Near San Diego, Cal. (Parry).
Furfuraceous-puberulent, 6-8 i hi; ak 3" lg, not attenuate; palea softer than in Microseris Lindleyi, its awn less than 1/2 as lg. Mt Diablo, to SD (Parry).
Calais Parryi Greene, Cal ac b 2:49.
M. PAEVULA P 5:11.
MICROSERIS PLATYCARPHA A. Gray. Sch Bip, lc, 308. Greene, Cal ac b 2:45. P 5:8. B 1:426. A 1:67 d.
M. PULCHELLA P 5:14.
M. PROKIMA P 5:8.
M. PICTA P 5:10.
424.
M. STENOCARPHA P 5:14.
M. SYLVATICA Sch Bip, lc 309. B 1: 426.
M. TENUISECTA P 5:6.
M. TROXIMOIDES G 9:211. B 1:427.
MICROSERIS P 3:309. A 1:176 d.
M. ANDICOLA P 3:303 (Collomia gracilis var. andicola Bth), Chili.
M. CALIPOENICA P 3:301. Ab 312. A 1:176 d.
M. GLABELLA P 3:301. Wash.
M. GRACILIS P 3:300 (Collomia gracilis Dougl).
M. HUMILIS P 3:301 (Collomia humilis Dougl).
M. MICRANTHA P 3:303 (Collomia micrantha K 3:18).
M. STRICTA P 3:302. Col. Ore.
MILLA Cav, lc 2:76 t 196 (1793).
M. BIPLORA Cav lc 2:76 t 196. A 1: 340 d. B 2:153. Mex.
M. CAPITATA Baker, J L sc 11:381. B 2:154 as Brodiaea c.
M. CROCEA Baker, J L sc 11:384. B 2: 155 as Brodiaea c.
M. GRANDIFLORA Baker, J L sc 11: 380. B 2:154 as Brodiaea g. = B: Douglasii fide IK.
M. HYACINTHINA Baker, J L sc 11: 385. B 2:156 as
M. IXIOIDES Baker, J L sc 11:383. B 2:155 as Brodiaea l.
M. LAXA Baker, J L sc 11:384. B 2:155 as Brodiaea l.
M. MARITIMA Wat, bot king 354. B 2:152 as Bullia m.
M. PEDUNCULARIS Baker, J L sc 11: 384. B 2:155 as Brodiaea p.
MILITZIA DC 9:296 (1845. = Emmen-anthe fide IK.
M. LUTEA DC lc. B 1:514 as E: 1.
Genus **MIMETANTHE** Greene. A 1:95 fdr.
MIMETANTHA PILOSA Greene. A 1:96 d. Er 1:13.
MIMOSA L, Gen ed 1. 155 (1737).
M. PILIFLORA Sw Fl Ind Occ 2:986. A 1:315 as Prosopis juliflora.
Genus **MIMULUS** Linnaeus. L, Act sc Upsal (1741) 82. A 1:230.
M. ALSINOIDES Dougl ex Bth, Scroph Ind 29. B 1:567.
M. ANDROSACEUS Cur 1:121. K Br, Z 1:83, SCruz Co. A 1:231 as = Palmeri fide Cur. Tehachapi, Quentin.

M. ANGUSTATUS Z 2:80.

M. ARVENSI P 1:37 Lake Co.

M. ATROPURPUREUS K 1:59. Cur 1:145 as *Eunanus* Douglasii Bth. = *M. Kelloggii* Cur.

M. AURENTIACUS Curt bot mag t 354. B 1:566 as *glutinosus*.

M. BICOLOR Bth 328. B 1:568, 2:474.

M. BIGELOWII G, 11:96 et B 1:564; Ab 365. Da 13. A 1:230.

Low ann. branching from base, glandular pubescent lvs oblig, upper ovate, acute or acuminate; ex-teeth nearly =, very acutely subulate from a broad campanulate tube; cor about 1.5 cm lg, limb rotate, crum with y center; throat cylindraceous; cap obly-lanceolate, slightly exceeding ex. valves membranaceous. So. Cal.; Utt. Nev.

Eunanus bigelowii, Gray. Pac Ry R 4:121. — Greene, Cal ac b 1:102. So Cal; Utah; Nevada.

M. BOLANDERII G 8:381. B 1:565.

M. BREWERII Greene, Cov 171.

MIMULUS CARDINALIS Dougl.

Hort tr 2:70 t 3. Par 366. P 1:206 Cedros. Greene, Cal ac b 2:409 Cruz. B 1:566. Ab 365. Da 13. A 1:231 d. Ha 116. Or W 5:12.

Viscid-villous, 2-4 ft. high; leaves ovate, erose; cor scarlet, rarely y, over 1 in. long.

MIMULUS CLEVELANDI Brandegee.

A 1:83 fdr. Greene, Er 4:22 as *Diplacus* C.

M. CLIVICOLA M 1:60 s.

M. CUPEUS Regel, Gartenfl (1864) 3. B 1:567.

M. DENTATUS G, Pac Ry R 4:120. B 1:567 as form of *luteus*? Ore.

M. douglasii G 11:95; B 1:563. Par 228.

M. EISENII K 7:89. Cur 1:145 as *lacinatus* G.

MIMULUS EXIGUUS A. Gray.

G 20:307. A 1:230.

Baja mts (Orcutt). Probably *M. Palmeri*.

MIMULUS FLORIBUNDUS Dougl.

Lindl, Bot Reg 14 t 1125 (1828).

Greene, Cal ac b 2:409 Cruz. B 1:569. Ab 366. Da 13. A 1:230 d.

Type locality: "on moist rocks in the interior of the districts of the river Columbia."

Rocky mts; Col, Wyo, Cal, Ore, Baja, Cruz.

Coville, CNH 4:171. Kernville.

Hall, U 116.

Abrams, Fl LA 366.

Mimulus peduncularis Douglas, Scroph Ind 29 (fide Greene).

MIMULUS FREMONTI A. Gray.

G 21:96 et B 1:565. Z 2:165. Ab 365. Da 13. A 1:231 d. Ha 116.

M. GLABRATUS P 1:282 Lake Co.

M. GLABRATUS G, bot Mex bound 116. = *Jamesii* fide IK. (HBK, Nov Gen et sp 2:370 is doubtfully referred to *luteus* in B 1:567.)

M. EXILIS D & H, Pac Ry R 5:12. Ha 116. B 1:569 as *pilosus*.

M. INAMOENUS P 5:137.

M. GLUTINOSUS WENDL. Br 1:215 Rosa. Da 13. B 1:565, 2:474. Z 1:112, 2:81, 83, 367.

Synonymy: *M. puniceus* Steud (fide Br

1:125). *Diplacus arachnoideus* et *parviflorus* Greene (fide Br 1:215).

Variety **PUNICEUS** G. Br Z 1:112 Cat. = *Diplacus* p.

M. GRANDIS M 1:110.

M. GUTTATUS DC. Greene, Cal ac b 1:110.

Synonymy: *M. luteus* Pursh (non-L.) fide Greene.

M. INODORUS Greene, Cal ac b 1:119. A 1:231 as *moschatus* var: *sessilifolius*.

M. LANGSDORFII.

Variety **GRANDIS** Greene. Ab 366.

Per from stoloniferous or creeping basal branches, glab or sparsely pubescent; sts stout, fistulose, oft 6-8 dm ht; lvs mostly elliptic, oft 6-8 cm lg, irr dentate, lower petioled, upper sessile; fls in a terminal raceme; ex in anthesis 8-12 mm lg, in fr somewhat lg'er and nearly twice as broad; upper ex-teeth somewhat lg'er; cor y with p or brown dots in throat, 2.5-5 cm lg. (*M. luteus* in part of recent authors, not of L.)

Variety **NASUTUS** Jepson, Fl W Mid Cal 407. Ha 116. (*M. nasutus* Greene, Cal ac b 1:112).

Variety **TILINGII** Greene. Lond J bot 33:8 (*M. Tilingii* Regel). Ha 116.

M. LACINIATUS G 11:98. B 1:567.

MIMULUS LATIFOLIUS A. Gray.

G 11:95. B 1:563. Br 1:204 Cruz. A 1:230. *Eunanus latifolius* Greene, Cal ac b 1:99.

Guadalupe (Palmer); Cruz (Br).

M. LEPTALEUS G 11:96. B 1:564.

M. LEWISII Pursh, Fl 2:427 (1814). B 1:566. Z 2:165. Par 252. Parry, Wyo 13.

Cov 172.

Type locality: "on the head springs of the Missouri, at the foot of Portage hill."

M. LINEARIS Bth, Scroph Ind 27. B 1:566 as *glutinosus* var: 1.

MIMULUS LUTEUS Linn.

L, sp pl ed 2, 2:834 (1762). Cov 172 Argus mts, etc. Par 138 t. B 1:567. Da 13. Br 1:204 Cruz; 215 Rosa. Z 2:165, 367. Ab 366.

Type locality: "in Peru."

Variety **DEPAUPERATUS** G, B 1:567. Da 13.

M. LYRATUS Bth, Scroph Ind 28. B 1:567 as *luteus*.

M. MEPHITICUS Greene, Cal ac b 1:9. Z 2:166.

MIMULUS MICROPHYLLUS Benth.

DC 10:371. Ab 367. A 1:231 d. B 1:567 as *luteus* var: *depauperatus*.

MIMULUS MOHAVENSIS Lemmon.

Lemmon, bot gaz 9:142. A 1:230.

Eunanus mohavensis Greene, Cal ac b 1:106. Mohave river (Lemmon).

M. MONILIFORMIS Greene, Cal ac b 1:10. Da 13. A 1:231 as *moschatus* var: *longiflorus* in part.

M. MONOTOIDES G 7:38. B 1:568 as in part *rubellus* (mainly var: *latifolius*).

MIMULUS MOSCHATUS Dougl.

Lindl Bot Reg t 1118.

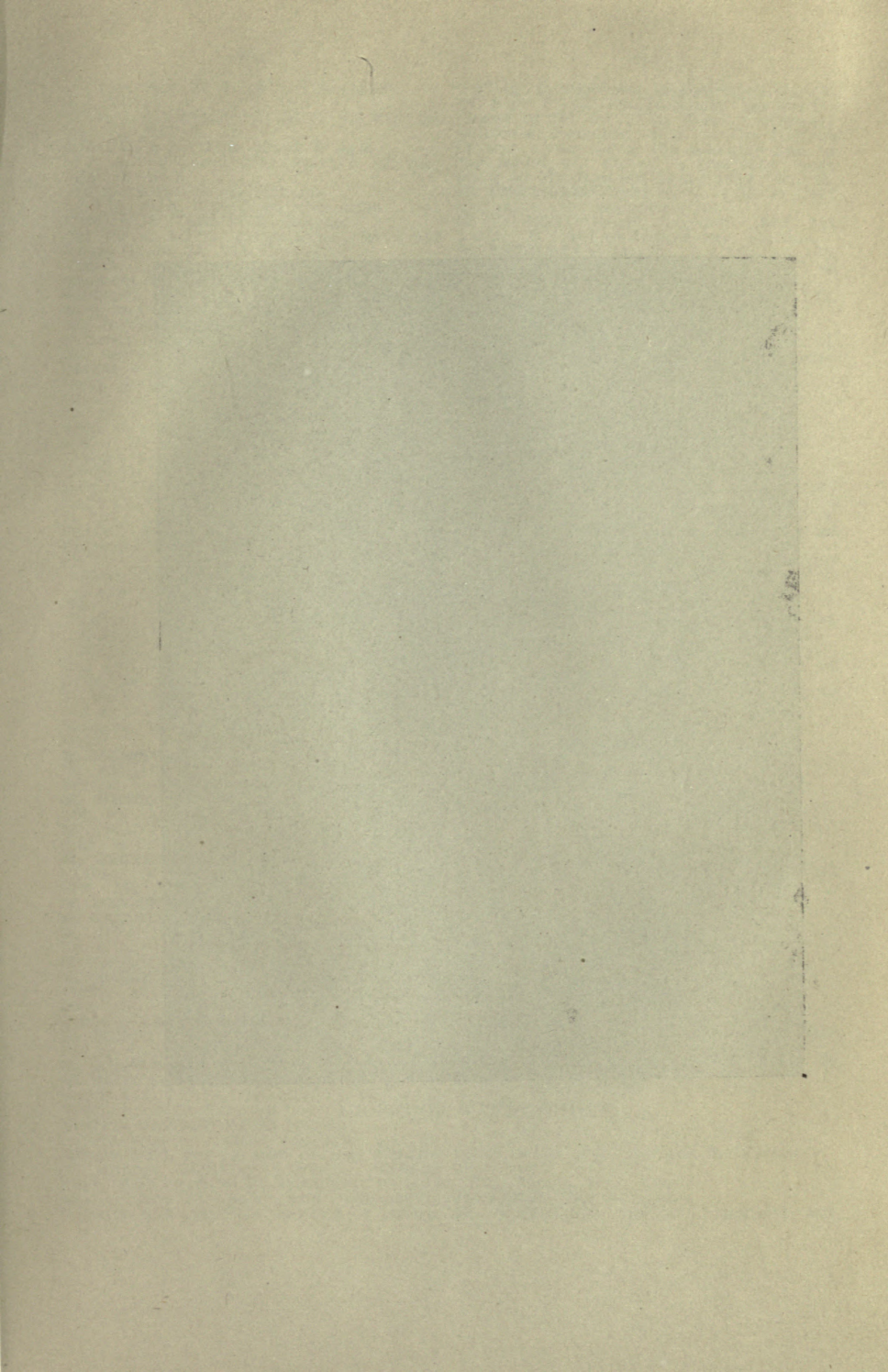
Parry, Bot obs Wyo 13.

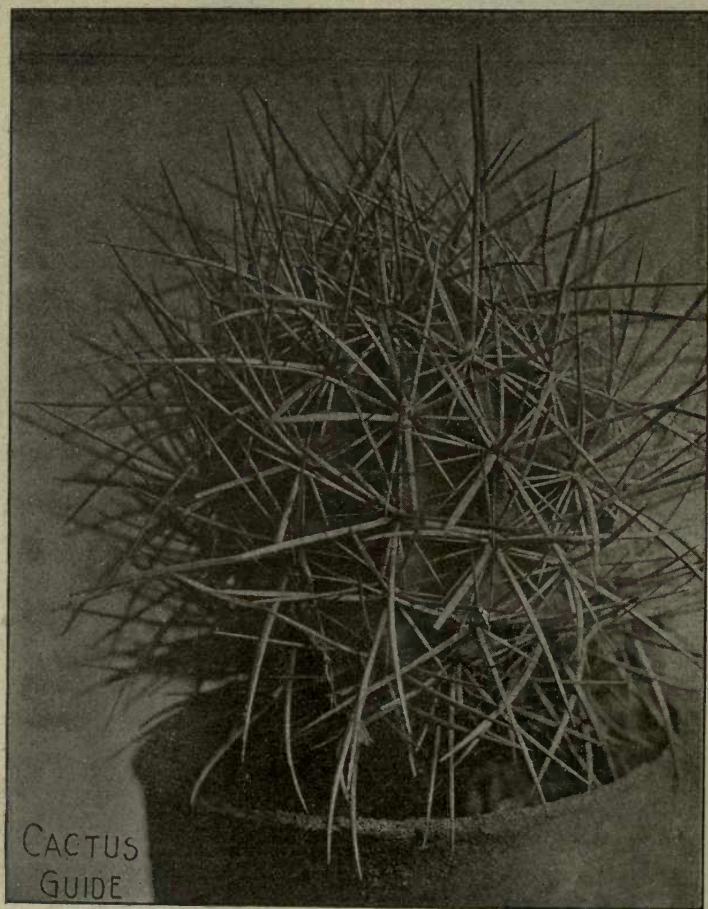
Gray, syn Fl 2:278.

Abrams, Fl LA 365.

Dougl, bot reg t 1118. Par 138. Da 13. B 1:569. 2:474. Z 2:83, 233. Ab 365. A 1:230 d.

Variety **LONGIFLORUS** A. Gray.





ECHINOCACTUS JOHNSONI

Gray, Syn Fl 2, pt 1, 278 (1879).

A 1:230 d.

Variety *SESSILIFOLIUS* G. Ab 366. Da 13. A 1:231 d.

MIMULUS NANUS Hook & Arn.

H & A bot Beech 378. Cov 172. SD mts (Parish 465).

Type locality: Californian.

6-9 in. high, fl'ng from near base.

MIMULUS NASUTUS Greene.

Cal ac b 1:112, 2:409 Cruz. Br 1:215 Rosa. Da 13. Ab 366. Cov 172.

Ann, glab or minutely pubescent, decumbent at base, 2-4 dm hi; lvs mostly subbasal, ovate-cordate to reniform-cordate, acute, coarsely toothed or lobed, the lowest on broad petioles, the floral reduced to bracts; ped hardly exceeding the mature ex or the lower much elongated; cx broadly campanulate, its teeth acute, very unequal, the upper one twice the length of the others; cor 1.5 cm lg, little surpassing the cx, deep y, with or without a large p blotch on the lower lip.

Type locality: "in Sonoma Co, Cal, at Knight's Valley and Skaggs' Springs."

MIMULUS PALMERI A. Gray.

G 12:82. Cov 172. Ha 117. K Br, Z 1:83. B 2:474. A 1:231d.

Parish, Z 5:118, SBER mts (questions Palmer's locality: "on the Mohave river.")

Gray, Am ac pr 12:82 (1876).

Type locality: "on the Mohave river," Cal.

Leaves narrow; cor nearly rotate.

Mohave; San Bernardino; Baja!

Minulus androsaceus Curran, Greene, Cal ac b 1:121, Tehachapi, and Santa Cruz Co. Quintin!

MIMULUS PARISHII Greene.

Cal ac b 1:108, Da 13. A 1:83 fdr. Ab 366. Mohave (Parish 1165); LA (Nevin); Baja!

M. PARRYI G 11:197. B 1:565.

M. PEDUNCULARIS Dougl ex Bth Scroph Ind 29. A 1:230 as floribundus.

M. PILOSUS Wat, bot king 225. B 1:569. Da 13. = exills fide IK.

M. PRATTENII Durand, Phil ac J, sr 2, 3:98. B 1:568 as bicolor.

M. PRIMULOIDES Bth, Scroph Ind 29 (1835). B 1:569. Z 2:165. Ha 118. Cov 172. (M. pilosellus Greene, Er 4:42).

M. PULCHELLUS Z 2:81.

M. PULSIFERAE G 11:98. B 1:568.

M. RIVULARIS Nutt, Phil ac J 7:47. Lodd, bot cal t 1575. B 1:567 as luteus.

M. ROEZLI Regel B 1:567 as luteus.

M. RUBELLAS G, bot Mex bound 116 (1859). B 1:568. Z 2:81. Cov 172 Panamint mts, etc.

Variety **LATIFLORUS** Wat. B 1:568.

M. ROSEUS Dougl, bot reg t 1591. B 1:566 as Lewisii.

M. DEFLEXUS Z 2:81.

M. SCOLEZII Hook, Fl 2:100 G. syn Pl Suppl 448. P 2:22, "frequent in woods of Wash back of Tacoma."

Variety **CAESPITOSUS** Greene.

"Sts slender, tufted and low, 1-5' hi, mostly 1-fld, per by num matted filiform or almost capillary stolons; herbage p'ish, glab or villous puberulent; lvs ovate, cuneate at base and subsessile, slightly and remotely toothed or entire,

2-5" lg; fl terminal, lg-peduncled, large; cx 4 or 5" lg, campanulate, the orifice closed in fr; cor 1' lg, deep y, strongly bilabiate. Forming mats on the surface of wet rocks along the margins and in the midst of alpine streamlets near snow on Mt. Rainier, 20 Ag 1889." P 2:22.

M. TENELLUS Nutt ex G 11:98. B 1:567 as luteus var: depauperatus.

M. TILINGII Regel, Gartenfl (1869) 321 t 631. B 1:567 as luteus var: alpinus.

M. TORREYI G 11:197. B 1:565. Z 2:165.

M. TICOLOR Hartw, ex Lindl J Hort sc 4:222. B 1:563.

M. VARIEGATUS Lodd, bot cab t 1872. B 1:567 as luteus.

MIMULUS INCONSPICUUS A. Gray.

G. Pac Ry R 4:120. B 1:568. A 1:231 d. Leaves ovate, entire, 1/2 in. long or less.

Columbia river; Baja!

MINA LOBATA Cav.

See *Ipomoea versicolor*.

Genus **MIRABILIS** Linnaeus.

Riv, ex L, syst ed 1 (1735). A 1:277 d.

MIRABILIS ASPERA Greene.

A 1:86 fdr.

M. CALIFORNICA G, bot Mex Bound 173. Par 214 t. P 1:207 Cedros. 266 San Benito Isl. Greene. Cal ac b 2:411 Cruz.

Da 14. Ab 137. B 2:38, 479. A 1:278 as laevis.

Variety **VILLOSA** K 3:10. Cur 1:146 "not sufficient difference to constitute a variety."

MIRABILIS FROEBELII Behr.

Type locality: Warner's Ranch SD Co. Coville, CNH 4:177. Panamint mts.

Colo. to Texas; mts San Diego (Or).

Oxybaphus Froebelii Behr, Cal ac pr 1:69 (1855).

Mirabilis multiflora var *pubescens* Watson, Bot Cal 2:2.

Greene. Cal ac b 1:124. A 1:277 d.

M. GREENEI Wat 12:253. B 2:2.

M. JALAPA L, sp pl 177. B 2:2.

MIRABILIS LAEVIS Curran.

A 1:278 d.

Nevada, Utah, to Southern Baja.

Curran, Cal ac pr sr 2, 1:235 (1889).

Type locality: "Bay of Magdalena," Baja.

Coville, CNH 4:177. Ut; Nev; Cal. *Oxybaphus laevis* Bentham, Bot Sulph 44 (1844).

Mirabilis Californica Gray.

Gray, Bot Mex B 173.

Abrams, Fl LA 137.

MIRABILIS MULTIFLORA A. Gray.

G. Mex bound r 173. B 2:2, 479. A 1:278.

Gray, Bot Mex B 169 (1859).

Watson, Bot Cal 2:2.

See *M. Froebelii* Behr.

Oxybaphus multiflorus Torrey, Ann Lye NY 2:237 (1828).

Type locality: "about the Forks of the Platte."

Variety **PUBESCENS** S. Watson.

Ab 136. A 1:278.

Abrams, Fl LA 136.

See *Mirabilis Froebelii* Behr.

MIRABILIS TENUILOBA S. Watson.

Wat 17:375. A 1:278.

San Borgia. Baja (Br).

M. TRIFLORA Z 2:148.

M. WATSONII Heimerl, Engler's bot

Jahr 11:84. Z 1:62. Guatemala.

MITELLA Tourn ex L syst ed 1 (1735).

M. BREWERI G 6:533. B 1:199. Z 2:162.
M. CAULESCENS Nutt. T & G Fl 1: 586.
B 1:200.

M. DIPHYLLO L, sp pl 406. B 1:200.

M. DIVERSIFOLIA P 1:32, Trinity mts, Cal.

M. GRANDIFLORA Pursh Fl 1:314. B 1:197 as Tellima g.

M. NUDA L, sp pl 406. Sib. B 1:200.

M. OVALIS P 1:32, Mendocino Co.

M. PENTANDA Hook, bot mag t 2933.
B 1:200. Parry, Wyo 13.

M. TRIFIDA R Graham, Edinb N Phil J (Ap-Je 1829) 185. B 1:200. Parry, Wyo 13. LA (Da).

MINIUM L. Moss.

M. AFFINE Blond. B 2:397, Nev, Alk, Eu.

Variety **ELATUM** Schimp. B 2:397, near Clear Lake, Cal; Eu.

M. ANDROGYNUM L; Engl bot t 1238.

B 2:400 as Aulacomnium a.

M. CRUDUM Hedw, Musc Frond 1:99 t 37. B 2:391 as Bryum c.

M. DEUMMONDII Bruch & Schimp. Ore. B 2:398.

M. INSIGNE Mitt, in Hook J bot 8:230. B 2:397 as affine var: elatum.

M. MENZIESII Muell. B 2:397.

M. NEVII Muell, Flora 56:481. Torr cl b 5:5. B 2:398. Ore.

M. PSEUDOTRIQUETRUM Hedw, Musc Frond 3; t 7. B 2:396 as Bryum p.

M. PUNCTATUM Hedw. B 2:398.

M. SPINULOSUM Bruch & Schimp. B 2:398, Ore, Eu.

M. VENUSTUM Mitten, Hook J bot 8: 231 t 12 B. B 2:398.

Genus **MODIOLA** Moench.

Prostrate or ascending herbs oft rt'ing from the nodes, with palmately cleft or divided lvs, and sm axy peduncled fls: bracts of the inv 3, distinct: ex 5-cleft: cells of ova many, with 2-3 ovules in each: sty branches stigmatic at summit: carpels 15-20, septate between the sds, dehiscent into 2 valves, with awn-pointed tips, and aristate on back.

MODIOLA CAROLINIANA Don.

Decumbent, ann or bien, more or less pubescent, freely branching: sts 15-45 cm lg lvs nearly orbicular in outline, 1-6 cm wide, petioled, pedately 3-5-cleft, rarely simply dentate or incised; fls axy, 6-10 mm broad, r; peds at length elongated; fr depressed-orbicular, carpels hispid-aristate along back.

Da 3; Er 1:58. LA Co. Ab 246.

MOEHRINGIA L, syst ed 2, 22 (1740). =Arenaria fide IK.

M. MACROPHYLLA Fenzl, Verb Als t ed 18, 38. (T, bot Wilkes exp 246. =A: m fide B 1:70.)

M. UMBROSA G, Pl Fendl 13, not Fenzl, B 1:70 as A: macrophylla.

Genus **MOHAVEA** A. Gray.

MOHAVEA G, Pac Ry R 4:122 (1856).

M. VISCIDA G, lc. B 1:552.

Leaves crenate, obtuse: calyx often white-hairy.

MONERMA Beauv, Agrost 116 (1812). =Psillurus fide IK.

M. SUBULATA Beauv, Agrost 117. Parish, Er 6:85 Oceanside, Cal. Mediteranean region, So Africa. Australia. =

Lepturus cylindricus fide IK.

Genus **MOLLUGO** Linnaeus.

Ann, ours prostrate, glab, much-branched, with verticillate stipulate lvs: stipules scarious, membranous, decid: fls axy on lg slender pedicels: ex 5-parted, persistent; sep scarious-margined: pet 0: sta 3-5: ova ovoid or globose, 3-celled: cap 3-celled, 3-valved, loculicidally dehiscent. Carpet-weed.

M. VERTICILLATA L, sp pl 1:89 (1753). McClatchie, Er 2:123 LA. Cov 115, 261. A 1:168 d. B 1:252.

Genus **MONARDELLA** Benth.

Lab 331. DC 12:190. A 1:275 d.

A 1:275 d. G lfts 1:168 as Madronella.

M. ANEMONOIDES P 5:86. G lfts as

Mad: a. mts Kern Co, Cal.

M. BREWERI G 7:386. G lfts as Mad: B. B 1:594.

MONARDELLA CANDICANS Benth.

San Bernardino (Parish 886).

Bth 330. G lfts as Mad: c. A 1:276. B 1:594.

M. CERIACEA M 1:35. Sonoma Co. Cal.

M. DOUGLASII Bth, Lab. 332. G lfts as Mad: D. B 1:585.

M. DISCOLOE P 2:24. G lfts as Mad: d. Wash.

MONARDELLA EPILOBOIODES Greene P 5:85. A 1:18 fdr. G lfts as Mad: e. Bear.

M. EXILIS P 5:86. G lfts as Mad: e. Kern Co, Cal.

M. GLAUCA P 4:321. G lfts as Mad: g.

M. GLOBOSA P 5:82. G lfts as Mad: g.

Alameda Co, Cal.

MONARDELLA HYPOLEUCA A. Gray.

SD: San Juan Hot Springs (Nevin).

Syn Fl 2 (1):356. G lfts as Mad: h. A 1:276. B 2:476.

M. INGEATA P 5:83. G lfts as Mad: i. Ore.

M. INVOLUCRATA M 1:34. Monterey Co, Cal.

MONARDELLA LANCEOLATA A. Gray.

G lfts as Mad: l. B 1:594. A 1:19, 279 d. Da 14. Par 330.

Abrams, Fl LA 347.

Gray, Am ac p 11:102 (1876).—Bot Cal 1:594.

Type locality: "Cal, from Plumas to SD Co."

Coville, CNH 4:175. Panamint mts.

Common throughout Cal; Baja! L A (Davidson).

Variety **MICROCEPHALA** A. Gray.

M. LEUCOCERPEALA G 7:385. G lfts as Mad: l. B 1:595, 2:476.

M. LEDIFOLIA P 5:81. G lfts as Mad: l. Napa Co, Cal.

MONARDELLA LINOIDES Gray.

Gray, Am ac pr 11:101 (1876).—Bot Cal 1:594.

Type locality: "mts east of SD."

Coville, CNH 4:175. Panamint mts.

San Diego! Mohave.

G lfts as Mad: l. B 2:476. A 1:275 d.

VARIETY STRICTA Parish.

MONARDELLA MACRATHA A. Gray.

G 11:100. G lfts as Mad: m. A 1:78 d. B 1:593, 2:476.

Variety **ARIDA** Hall.

Variety **NANA** A. Gray.

Monardella nana A. GRAY, Am ac pr 11:101.

Variety *PINETORUM* Hall.

Variety *TENUIFLORA* Gray.

M. MODOCENSIS P 4:321. G lfts as Mad: m.

M. MOLLIS M 1:35. Marin Co, Cal.

M. MUBICULATA P 5:84. G lfts as Mad: m. Nev.

M. NANA G 11:100. G lfts as Mad: n. A 1:79 as macrantha var. nana. B 1:593.

M. NEGLECTA P 5:82. G lfts as Mad: n. Marin Co, Cal.

M. NERVOSA P 4:322. G lfts as Mad: n.

M. OBLONGA P 5:83. G lfts as Mad: o. mts south of Tehachipi, Cal.

M. ODORATISSIMA Bth, Lob 332. B 1:594. Cov 175. G lfts as Mad: o. A 1:363 d. Par 330. Z 2:166.

M. OVATA P 5:82. G lfts as Mad: o. Sisson, Cal.

M. PALLIDA M 1:36. Nevada Co, Cal.

M. PALMERI G 12:82. G lfts as Mad: P. B 2:476.

MONARDELLA PENINSULARIS Greene P 5:87. A 1:18 fdr. G lfts as Mad: p. Baja!

M. PINETORUM M 1:36. Lake Co, Cal.

M. PRINGLEI G 19:96. G lfts as Mad: P. A 1:363 fdr. Colton, Cal (C. G. Pringle).

M. RUBELLA P 5:84. G lfts as Mad: r. Nev.

MONARDELLA SANGUINEA Greene. P. 5:86. A 1:18, 19 fdr. Glfts as Mad: s. SD & Sber Co.

M. SHELTONI T, Pl Dur. G lfts as Mad: S. B 1:593 as villosa var. glabella.

M. SUBSERBATA P 5:81. G lfts as Mad: s. Sonoma Co, Cal.

M. THYMIFOLIA Greene, Cal, ac b 1:211. G lfts as Mad: T. P 1:206 Cedros. A 1:363 fdr.

MONARDELLA TENUIFLORA S. Wat. **M. UNDULATA** Bth, Lab 332. G lfts as Mad: u. B 1:594.

M. VILLOSA Bth, bot sulph 42 t 21. G lfts as Mad: v. B 1:593. Par 330 t. A 1:363 d.

MONARDELLA VIMINEA Greene. P 5:85. A 1:19 fdr. G lfts as Mad: v. SD Co.

MONESSES Salisb ex S. F. Gray, Nat Arr Brit Pl 2:403 (1821).

M. GRANDIFLORA S. F. Gray, lc. B 1:460 as uniflora.

M. UNIFLORA G, man ed 1, 273. B 1:460. =grandiflora fide IK.

Genus *MONOLEPIS* Schrader.

A 1:219 d.

M. CHENOPODIODES Moq in DC 13 (2) 85. B 2:49. Baja. =trifida fide IK.

MONOLEPIS NUTTALLIANA Greene.

Abrams, Fl LA 125. Cienega (Davisson). A 1:219 d.

M. FUSILLA T, ex Wat, bot king 289. B 2:49.

M. SPATHULATA G 7:389. Cov 179. B 2:49. Baja mts!

Type locality: "Sierra Nevada, at Mono Pass," Cal.

M. TRIFIDA Schrad Ind sem Hort Gotting (1830) 4. Sib.

MONOLOPIA DC 6:74 (1837).

Woolly an with alt entire or denticulate lvs and large peduncled hds of y fls: inv hemispheric, its bracts united into a cup with broad triangular teeth or

distinct to the base: receptacle conical, naked; ray fls 3-4-toothed, bearing at the base of ligule an oblong or roundish denticulate appendage: disk-cor somewhat hairy on the lobes: ak angular, black: pap 0.

M. BAHIAEFOLIA Bth 317. B 1:383.

Variety *PINNATIFIDA* G, B 1:383.

M. GLABRATA F & M B 1:384 as *Las-thenia* g.

M. HEERMANNI Durand. B 1:383 as *bahiaefolia* var. *pinnatifida*.

M. LANCEOLATA Nutt. B 1:384 as *major* (Bth refers to *Bahia arachnoides*).

M. MAJOR DC. B 1:383. Ab 430, Monica mts.

Stoutish, nearly simple or with several pedunculiform naked monocephalous branches, about 5 dm hi; hds about 3 cm broad; bracts of inv joined into a broad campanulate-toothed cup; ak 4 mm lg.

Variety *LANCEOLATA* G, B 1:384. Da 9.

M. MINOR DC 6:74. B 1:383.

Genus *MONOPTILON* Torrey & Gray.

MONOPTILON T & G, Bost sc nat hist pr 1:210 (1844).

M. BELLIDIFORME T & G, lc, 5:106. B 1:306.

MONOTROPA L, syst ed 1 (1735).

M. FIMBRIATA G 8:629. Cal, B 1:463.

M. HYPOPITYS L, sp pl 387. B 1:463. = *Hypopitys multiflora* fide IK.

M. UNIFLORA L, sp pl 387. B 1:463.

MONTIA Micheli. A 1:164 d.

M. FONTANA L, sp pl 87. B 1:77.

M. LAMPROSPERMA Cham, in Linn-aea 6:565. B 1:77 as *fontana*.

M. PERFOLIATA Howell. Par 18t. Ab 142. A 1:164 d. M 3:48. Indian lettuce. Miner's lettuce.

M. SPATHULATA Howell. Ab 142 A 1:164 d. M 3:48.

M. PARVIFLORA Howell. M 4:66.

MORUS [Tourn] L, syst ed 1 (1735).

M. MICROPHYLLA Buckl, Am ac pr 1862: 8. Tex. Ar. B 2:63. = *rubra* fide IK.

MUCEONEA Bth, Linn sc tr 17:419 t 20 (1836).

M. CALIFORNICA Bth, lc. B 2:35 as *Chorizanthe* C.

Genus *MULLA* S. Watson.

Herbage without the taste or odor of onions: scape from a fibrous-coated corm and bearing an umbel subtended by several sm scarious bracts: lvs mostly few, very nar, almost terete: bracts 4-6, broadly or narly lanceolate: perianth subrotate, persistent, of 6 nearly equal slightly united oblg-lanceolate seg, g'ish- or y'ish-w with a dark 2-nerved midrib: sta inserted near base; fil filiform, slightly thickened toward base or petaloid; anth versatile: ovules 8-10 in each cell; sty clavate, persistent and at length splitting: cap globose, scarcely lobed, localicidal: sds compressed and angled. (Anagram of *Allium*).

MULLA CORONATA Greene.

P 1:165. A 1:84 fdr.

MULLA MARITIMA S. Watson.

Wat 14:235. B 2:151. Z 2:375. Da 17. Par 375. Marin Co, Baja!

MULLA SEROTINA Greene.

"Lvs 12-16" lg subterete, the upper surface nearly plane (slightly concave), the lower convex and sharply 7-striate,

the keel-like raised striae retrorsely scabrous; scapes 14-20' hi, glab, glauc; umbel 40-70-fl'd; pedicels nearly 2' lg; perianth rotate, $\frac{1}{2}$ ' broad, gl'ish w; sep obliq-linear, pet obliq: fil stout-subulate, little compressed; anth $\frac{1}{2}$ ' lg, lurid p. Com among the mts in the interior of Southern Cal.—Er 1:152. Ab 85. Ha 68. Par 375.

M. TRANSMONTANA P 1:73, Reno Nev (Miss Amy Pease).

MULGEDIUM Cass in Dict sc nat 33: 296 (1824). = *Lactuca* fide IK.

M. HETEROPHYLLUM Nutt, Am phil sc tr, ns, 7:441. B 1:442 as L: pulchella.

M. LEUCOPHAEUM DC B 1:442 as L: leucophaea.

M. PULCHELLUM Nutt. B 1:442 as L: p.

MUNROA T, Pac Ry R 4:158 (1856).

M. SQUARROSA T, Pac Ry R 4:158. (Chrypsis squarrosa Nutt.) Brit Am to Mex.

Chrypsis squarrosa Nuttall.

British America to Mexico.
MYOSOTIS (Tourn) Diel ex L. syst ed 1 (1735).

M. ALPESTRIS L. Parry, Wyo 12, 14.

M. CALIFORNICA F & M. B 1:526 as *Eritrichium* C.

M. CHORISIANA C & S, Linnaea 4:444. P 1:13 as *Allocarya* c. B 1:526 as *Eritrichium* c.

M. FLACCIDA Lehm, Pugil 2:22. Hook Fl 2:82. P 1:115 as *Cryptanthus* f. A 1: 206 s. B 1:522 s, 528 s.

M. FULVA H & A B 1:526 as *Eritrichium* f.

M. GLOMERATA Nutt. B 1:528 as *Eritrichium* g.

M. LEUCOPHAEA Dougl, Hook Fl 2:82. P 1:82 as *Oreocarya* l. B 1:529 as

M. SCOULERI H & A B 1:526 as *Eritrichium* S.

M. SUFFRUTICOSA T, Ann Lyc NY 2: 225. P 1:57 as *Oreocarya* s.

M. SYLVATICA Hoffmann. B 1:522.

Variety **ALPESTRIS** Koch. B 1:522, Ore, Arctic regions, Asia, Eu.

M. TENELLA Nutt. B 1:526 as *Eritrichium* t.

M. VERNA Nutt. B 1:522.

M. VERSICOLOR Hook Fl? B 1:522 as *verna* in part.

MYGINDA Jacq, Enum pl Caril 1 (1760).

M. MYRTIFOLIA Nutt, Gen 1:109. B 1:99 as *Pachystima myrsinites* Raf.

MYOSURUS L. A 1:148 d.

M. APETALUS Gay. A 1:148 d.

Variety **LEPTURUS** G. A 1:149.

M. ARISTATUS Bth. B 1:51. A 1:149 as *apetalus*.

M. MAJOR P 3:257.

M. MINIMUS L. A 1:149 d. B 1:5. P 3: 257.

Variety **APUS** Greene. A 1:49.

Variety **FILIFORMIS** Greene. A 1:149.

M. SHORTII Raf. A 1:149 S.

M. TENELLUS P 3:257.

Genus **MYRICA** Linnaeus.

Shrubs or sm trees, with entire, dentate or lobed mostly resinous-dotted lvs, mon or dioe; stam aments obliq or narly cylindric; sta 4-8; pist aments ovoid or subglobose; ova subtended by 2-4 sh bractlets: fr globose, waxy.

M. CALIFORNICA Cham. Da 16. Ab 98.

B 2:81. Z 2:336.

Thickly branched evergreen shrub, 2-3 m hi; lvs thick, glab, obliq or oblanceolate, tapering to an acute apex, nar'd below to a sh petiole, 6-12 cm lg, remotely serrate or nearly entire; stam aments below the pist, 2 cm lg or less; sta 7-16, united by fil; bractlets 2, narly obliq, hairy at apex; pist aments in axils of upper lvs, 6-10 mm lg; ova ovate, with 2 exserted sty, r; bractlets minute; fr brownish-p, covered with a whitish wax, 4 mm in diam. *Monica* (Hasse).

M. GALE L, sp pl 1024. (Bth 336 = *Hartwegi* fide B 2:82.)

M. HARTWEGI Wat 10:350. B 2:81. Z 2:159.

MYEIOPHYLLUM L. A 1:328 d.

M. HIPPUROIDES Nutt, T & G Fl 1:530. B 1:215. 2:447.

M. SCABRATUM Michx Fl 2:190. (C & S, Linnaea 4:506 = *hippuroides* fide B 1:

M. SEICATUM L, sp pl 992. B 1:215. Z 2:351. Ab 274. A 1:328 d.

M. VERTICILLATUM L, sp pl 992. B 1:215.

MYRENIS L, syst ed 1 (1735).

M. OCCIDENTALIS B & H, Gen 1:897. B 1:262 as *Glycosma* o.

NABALUS Cass, in Dict sc nat 34:94 (1825). = *Prenanthes* fide IK.

N. ALATUS Hook Fl 1:294 t 102. = P: alata fide IK. M 1:8 as *N. hastatus*.

N. BARBATUS M 1:8, based on *N. Fraseri* var. *barbatus* T & G Fl 2:481 (*Prenanthes serpentaria* var. *barbatus* G, syn Fl 1 (2):434.

N. HASTATUS M 1:8 based on *Sonchus hastatus* Less, Linnaea 6:99.

N. MAINENSIS M 1:8 based on *Prenanthes Mainensis* G syn Fl 1 (2): 433.

Genus *NAIAS* Linnaeus.

Sts slender, branching, from fibrous rts: lvs all submerged, opp or whorled, spiny-toothed, sheathing at base: fls mon or dioe, axyl, solitary, sessile or pedicelled: stam with a double perianth; the outer entire or 4-toothed at apex, inner one hyaline, adhering to anth: sta sessile or stalked; anth 1-4-celled, apiculate or 2-lobed at summit: pist fls of a single ova, which tapers into a sh sty; stig 2-4, subulate: fr a solitary carpel, sessile, ellipsoidal, with a crustaceous pericarp. **N. CANADENSIS** Michx, Fl 2:220. B 2: 191 as *flexilis*.

NAIAS FLEXILIS R-S.

Rostk & Schmidt, Fl Sedin 382. Eu, Egypt. Ab 13. B 2:191. Da 17.

St slender, forking: lvs linear pellucid, acuminate or acute, 1-2 cm lg, 1-2 mm wide, num and crowded on upper branches with 25-30 minute teeth on each margin; fr 2-4 mm lg, 0.5-1 mm in diam; sty lg, persistent; stig sh. Da 17. SF.

NAIAS MAJOR Allione.

Fl Pedem 2:221. B 2:191.

Sts rather stout, oft armed with broad prickles: lvs broadly linear, 3-18" lg, coarsely and sharply toothed, the dilated base entire: fr 2-2 $\frac{1}{2}$ " lg: sd very finely lineate, obliq, slightly compressed. Nev, Ar, Ut, NY, Eu, Cal.

NAIOCRENE Rydb. M 3:146.

N. FILICAULIS M 3:146 based on *Clay-* (917

tonia f Dougl, Hook Fl 1:22 t 72 (1834). Ore.

N. FLAGELLARIS M 3:147 based on Claytonia f Bong (Montia f Rob). Alk.

N. OBTUSATA M 3:147 based on Montia o. M 2:32.

N. PARVIFOLIA Rydb. M 3:147, "probably an aggregate."

Genus NAMA Linnaeus.

Conanthus of some authors.

Cx deeply 4-parted: cor funnelliform or somewhat salverform; tube without internal appendages: sta oft unequal, unequally inserted, included: sty 2, distinct to base: stig capitate: cap thin, completely or incompletely 2-celled by the meeting or approximation in axis of 2 thin dilated placenta, 2-valved; valves entire: sds com num. Low herbs or suffrutescent: lvs entire; fls p, bluish or w.

*Ann. pubescent or hirsute: fls terminal and lateral or in the forks, sheduncled or sessile: sds with a thin and translucent close coat.

NAMA HISPIDUM A. Gray.

G 5:339. B 1:517.

Span to 1^o hi, repeatedly forked, hirsute or hispid: lvs linear spatulate, most of upper ones sessile: fls lateral and solitary, or 3-5 in terminal and 1-sided nearly bractless clusters: sep nar-linear, hardly broadened upward, sh'er than p cor: cap nar-oblig, 30-40 sds: sds nearly smooth. Along Rio Colo to Tex. Near Salada, Baja! Magdalena bay (Bryant).

N. DEMISSUM G. A 1:172 d. B 1:517. Da 12.

N. COULTERI G 8:283. B 1:517.

Span hi, diffusely branched, hirsute-pubescent, viscid: lvs sh, oblg-spatulate, lower tapering into a petiole: fls sh-pedicelled in forks: sep with spatulate-dilated tips, not $\frac{1}{4}$ as lg as funnelliform cor: cap nar oblig, 50-60 sds: sds obscurely wrinkled or pitted. "Cal"—probably Ar or Mex instead.

NAMA STENOCARPUM A. Gray.

G 10:331. Da 12.

Cauline lvs sessile, the upper by a more or less clasping base, villous-pubescent, viscid: sds num, sh, angled by mutual pressure. $\frac{1}{4}$ " lg. Tex, Mex, Ar, Monica (Hasse). =Conanthus stenocarpus Heller.

**Suffrutescent and caespitose-procumbent, silky-woolly: lvs entire: fls thyrsoid-glomerate: ova and sty hirsute.

N. LOBBII G 6:37, 8:285. B 1:517. Z 2: 158 165.

***Per or woody-stemmed, erect, hirsute or hispid: lvs sessile, undulate or sinuate-dentate: fls glomerate or spicate.

N. ROTHROCKII G. B 1:621, 2:468. A 1:172 fdr.

Placed in *Eriodictyon* by some.

N. PABRYI G. B 1:621. Da 12. A 1:172 fdr.

Placed in *Eriodictyon* by some.

N. RACEMOSA K 5:51. Cur 1:143 as *Phacelia namatoides* G.

NARDOSMIA Cass in Dict sc nat 34:186 (1825). =*Petasites* fide IK.

N. PALMATA Hook Fl 1:308. B 1:407 as P: palmata.

NARTHECIUM Moehr. in act ac nat

OE. FILIFORMIS P 4:106.

cur 6:384 t 5 (1742).

N. CALIFORNICUM Baker, J L sc 15:

351. B 2:185. M 1:47 S.

N. OSSIFRAGUM Huds Fl Angl ed 1, 128; ed 2:145. Eu.

Variety **OCCEIDENTALE** G 7:391. B 2: 185 as *Californicum*.

NASTURTIUM L, syst ed 1 (1735). A 1:119 d.

AQUATICUM A 1:119 S. *curvisiliqua*

A 1:119 d; varieties *filipes*, et *lyratum*

A 1:120, obtusum var. *sphaerocarpum*

A 1:120, officinale A 1:119 d.

N. LAXUM Wat 24:39. P 3:11 as *Sibara laxa*, Baja.

N. LACUSTRE G, Gen III 1:132. P 3: 95 as *Nebeckia aquatica*.

N. LAEVIS A 1:120.

N. NATANS DC, syst 2:198.

N. LINIFOLIUM Nutt, Phil ac J 7:12.

P 3:127 as *Schoenocrambe linifolia*.

Variety **AMERICANUM** G, NY Lyc ann

3:223. P 3:95 as *Nebeckia aquatica*.

N. OCCIDENTALE Greene. P 3:97 as *Roripa occidentalis*.

N. TRACHYCARPUM G, US Geol surv b 2:233. P 3:96 as *Roripa trachycarpa*.

N. PUMILUM Nutt, Phil ac J 7:12. P 3:128 as *Schaenocrambe pygmaea*.

NAVARETTIA R & P. A 1:160 d.

Atractylodes A 1:99, 100, 160 d, *foliacea*. A 1:99 fdr, *hamata* A 1:100 fdr. *peninsularis*.

A 1:100 fdr, *prostrata* A 1:169 d, *viscidula* A 1:169 d.

N. BREWERI P 1:137 based on *Gilia Breweri* G.

NAVARETTIA DIVARICATA Greene.

"Closely allied to *N. prolifera*, but of different aspect, being sm and diffuse and the clusters crowded on sh branches: cor minute, cx-seg longer than the tube, from which latter the mature cap protrude and remain invested by the persistent tube of cor. Common at alt of 6,000 or 7,000' in the Sierra Nevada, from Kern Co (Mrs. Curran) northward thru Ore, etc. Mr. Sonne sends us from Truckee a manifest hybrid between this and *N. minima*, both of which species are plentiful in his vicinity. P 1:136. *Gilia divaricata* T in G 8:269.

N. ERECTA M 1:146, near Ukiah, Cal.

N. FILICAULIS P 1:134 based on *Gilia filicaulis* T.

N. HETERODOXA P 1:134 based on *Gilia heterodoxa* Greene. Hills near Calistoga, Cal.

N. INVOLUCRATA R & P, Fl Per et Chil 2:8. P 1:130, So Am; "type of genus."

N. LEPTANTHA P 1:283. Santos!

N. LEUCOCEPHALA Bth 324. P 1:131.

B 1:494 as *Gilia leucocephala* G.

N. MATTHEWSII Cov 153. P 3:30 as *Langloisia* M.

N. MINIMA Nutt. Gamb 160. P 1:131.

N. NIGELLAIFORMIS P 1:132, near Visalia, Cal.

N. PARVULA P 1:134 based on *Gilia parvula* P 1:72.

N. PROLIFERA A 1:135, near Visalia, Cal.

N. SCHOTTII T, Mex bound r 145. Cov 154. P 3:30 as *Langloisia* S. B 1:495, 2: 466 as *Loeselia* S.

N. SUBULIGERA P 1:137, Amador Co,

Cal.

M. COTULAEFOLIA H & A, bot Beech 368. P 1:132, plains of the lower valley of the Sacramento.

N. HETEROPHYLLA Bth. P 1:128 as *Collomia* het.

N. INTERTEXTA Hook Fl 2:75. P 1:131.

M. MELLITA P 1:134, based on Gilla m. **M. MINIMA** Nutt, Gamb 160. P 1:131. (Gilla m.)

M. MITRACARPA P 1:135, Lake Co. Jepson, Er 1:10, near Uncle Sam mt; 16. **N. PUBESCENS** H & A, bot Beech 368. P 1:133.

N. PUNGENS Hook Fl 2:75. P 1:133 as *squarrosa*.

N. SETOISSIMA P 3:30 as *Langloisia* S. **N. SQUAREBOSA** H & A, bot Beech 368. P 1:133. DC 10:310.

M. TAGEITINA P 1:137, Siskiyou Co. **NECKERA** Scop, Introd 313 (1777). = *Corydalis* fide IK. **NECKERA** (Moss).

N. ABIETINA Hook, Musc Exot t 7. B 2:409 as *Alsia* a.

N. CALIFORNICA H & A, bot Beech 162. B 2:409 as *Alsia* C.

N. CURTIPENDULA Hedw. B 2:408 as *Antitrichia* c.

N. DOUGLASII Hook. B 2:408.

N. GRACILIS Muell. B 2:407 as *Pterogonium* g.

N. MENZIESII Drum. B 2:408.

NEGUNDO Moench, Meth 334 (1794).

N. ACEROIDES Moench, Meth 334. (T. Pac Ry R 4:74 et bot Wilkes exp 259 = *Californicum* fide B 1:108.)

N. CALIFORNICUM T & G Fl 1:250. B 1:108, 2:439.

NEILLIA Don. P 2:25-31.

N. CAPITATA P 2:28 based on *Spiraea capitata* Pursh.

N. MALVACEA P 2:30, Idaho.

M. MONOGYNA P 2:29, based on *Spiraea* m.

N. OPULIFOLIA Wat, Bib Ind 29 excl var. *molis*, etc (1878). Par 87. B 1:171, 2:443. P 1:42 as *Physocarpus* o. P 2:27.

New England, Fla, Wis, Kans.

Variety **FERBUGINEA** Wat. P 2:28.

Variety **MOLLIS** Wat, Bib Ind 29. B 1:171.

N. TORREYI Wat 11:136. P 2:29 as *monogyna*. B 1:171, 2:443.

Genus NEMACAULIS Nuttall.

A 1:213d.

NEMACAULIS NUTTALLII Benth.

Nemacaulis denudata Nutt, Phila, ac J II, 1:168.

Nemacaulis foliosa Nutt, Phila, J ac II, 1:168.

Eriogonum denudatum Curran, Cal ac pr.

Nemacaulis denudata and *foliosa* Nutt Phila ac J II, 1:168.

S D to San Borgia, Baja (Br). C D! A 1:213. B 2:16.

Genus NEMACLADUS Nuttall.

Low and diffusely branched an, with num capillary branches, cauline lvs minute, sessile, subtending, the dichotomous branches: fls minute on rather lg capillary pedicels: cx partly or wholly free: cor bilabiate, the upper lip 2-

lobed or parted, the lower 3-lobed or parted: fil monadelphous to near the base; anth oval, glab sty incurved at tip; stig capitate, 2-lobed: cap 2-celled, 2-valved from tip, 7-40-seeded.

NEMACLADUS CAPILLARIS Greene.

A 1:2 fdr.

NEMACLADUS LONGIFLORUS A. Gry. A 1:3d.

NEMACLADUS PINNATIFIDUS Greene A 1:2 fdr.

NEMACLADUS RAMOSISSIMUS Nutt. A 1:3d. Da 10. B 1:445. Z 1:377.

Variety **MONTANUS** G. Ab 387. Ha 123. Based on *montanus* (which see for d).

Variety **PINNATIFIDUS** G. Ab 388. Based on *pinnatifidus* (which see for d).

NEMACLADUS RUBESCENS Greene. A 1:2 fdr.

NEMACLADUS TENUISSIMUS Greene. A 1:3 fdr.

NEMACLADUS MONTANUS Greene.

"Radical lvs spatulate-oblg, entire; whole plant glab, or with some vilous hairs on inner portion of base of pedicels and on st opp: pedicels firmly ascending: cx-teeth lanceolate, subequal and equaling the turbinate tube, which is adnate to the lower $\frac{1}{2}$ of the 7-12-seeded cap: cor rather large, w, open-campanulate; staminal tube elongated: sd large, ovate-oblg, with longitudinally compressed, zigzag reticulation. Mountain districts of the central portions of California, Butte Co (Elisha Brooks); Lake Co (D. Cleveland); Yosemite valley (Mrs. Curran). In respect to the paucity of the sds, the species is like *N. capillaris*, but the reticulation of them is widely different."—Greene, Cal ac b 1:197 (29 Ag 1885).

Genus NEMOPHILA Nuttall.

A 1:202 d.

NEMOPHILA AURITA Lindl. A 1:10, 68 d. Da 11. P 1:268 Cedros.

NEMOPHILA INSIGNIS Dougl. A 1:202 d. Da 11. Al 320. Par 2964.

Abrams, Fl LA 320.

Davidson, Pl LA Co 11.

Baby-eyes, fls cyanine blue.

NEMOPHILA INTEGRIFOLIA Abrams.

Abrams, Fl LA 321, based on *N. Menziesii integrifolia* Parish, which see for description.

NEMOPHILA MENZIESII H. & A. A 1:9 d. Da 11. B 1:504. Ha 107.

N. MODESTA K 7:93. Cur 1:142 "probably *Menziesii*."

N. NEMORENSIS Eastwood. M 3:117.

NEMOPHILA PEDUNCULATA Douglas

Washington to Baja! (Or 1128 in part).

A 1:202.

N. PLASKETTII Eastwood. M 3:117.

NEMOPHILA RACEMOSA Nutt. B 1:503. Ab 320. A 1:10 d.

NEMOPHILA SEPULTA Parish. A 1:10 fdr.

N. SPATHULATA Cov. M 4:66.

Sierra Nevada mts., Tulare Co; San Jacinto mts (Hall 2406).

Hall, U 107.

Coville, U S Na Hb cont 156.

Genus NEMOSEKIS Rafinesque.

P 2:192 (1891), based on *Rafinesquia* Nutt, not of Raf (1836).—A 1:288 d.
NEMOSERIS CALIFORNICA Greene.

P 2:193. A 1:251 d. Ab 447.

Rafinesquia Californica Nuttall.

SD; Baja! Cruz; Arizona.

NEMOSERIS NEOMEXICANA Greene.

Greene, Pittonia 2:193 (1891).

Coville, CNH 4:145. Panamint mts.

Rafinesquia neomexicana Gray, Pl Wright 2:103 (1853).

Type locality: "stony hills along the Rio Grande near El Paso, Tex."

A 1:289 d.

NEOBECKIA P 3:95.

N. AQUATICA P 3:95.

NEOTTIA L, syst ed 1 (1735).

N. *ESCHSCHOLTZIANA* Reichenb f Germ 13:148 t 478. = *Listera convallarioides* fide B 2:136.

N. *GEMMIPARA* Sm, Engl Fl 4:36. M 1:129 S. = *Spiranthes Romanzoffiana* fide IK.

N. *ODORATA* Nutt, Phil ac J 7:98. M 1:128 S. = *Spiranthes* o fide IK.

N. *TOETILIS* Parsh, Fl 2:589. M 1:129 s. = *Spiranthes gracilis* fide IK.

NEPETA Riv ex L, Gen ed 1, 170 (1737).

N. *CATARIA* L, sp pl 570. Catnip, Parish, Z 1:124. B 1:590.

N. *GLECHOMA* Bth, Lab gen et sp 485. B 1:590. Eu, Asia.

NEPHRODIDIUM Hooker & Baker.

N. *DUALE* J. D. Smith, bot gaz 7: Z 1:63. Guatemala.

N. *PATENS* Desv, Hook, sp Fil 4:95. B 2:346 as *Aspidium* p. M 3:57, SBar; near LA.

NERISYRENIA

N. *CAMPORUM* P 4:225.

N. *LINEARIFOLIA* P 4:225.

N. *ESAEA* Comm ex Juss Gen 332 (1789).

N. *VERTICILLATA* HBK, Nov Gen et sp 6:191. P 1:42 as *Decodon verticillatus* Elliott.

NESODRABA

N. *GRANDIS* P 3:253.

N. *MEGALOCARPA* P 3:253.

N. *SILIQUOSA* P 3:253.

NEWBERRYA T, Ann Lyc NY 8:55 (1867).

N. *CONGESTA* T, lc. B 1:463, 2:462.

N. *SPICATA* G 15:44. B 2:462.

N. *CANDEA* Adams Fam 2:219 (1763).

N. *PEYSALOIDES* Gaertn, Fruct 2:237 t 131 f 2. B 1:537. Peru.

NICOLETTIA G. R. Frem exp 2:315 (1845).

N. *OCCIDENTALIS* G. R. Frem exp 2:316. B 1:398, M 4:60.

NIEBERBERGIA Ruiz & Pavon, Prod 23 (1794).

N. *NANA* Miers, Hook, J Lond bot 5:177. B 2:468 as *Hesperochiron Californicus*.

Genus **NICOTIANA** Tournefort

Tobacco. Ann or per viscid-pubescent or rarely glab narcotic herbs, shrubs or sm trees, with alt entire or slightly undulate lvs, and medium-sized often y'ish or g'ish fls, in terminal oft bracted racemes or panicles; ex tubular-campanulate or ovoid, 5-cleft; cor funnelform, salver-shaped or nearly tubular, tube com elongated, limb 5-lobed, spreading; sta 5, inserted on tube of cor; fil filiform; anth 4-celled, sty slender; stig thickened tuber-like base, 15 cm hi or

capitate; cap 2-valved or sometimes 4-valved at summit, smooth: sds num, sm.

*Ann herbs.

**Fls pink-red (or w in cult), open thru the day: cap septicidal, dividing the 2 placentaes as well as partition.

N. **TOBACUM** L, sp pl 180. B 1:545.

Tall large-leaved, with a panicle of sh-pedicelled fls; cor 2' lg, funnelform with a wide or inflated throat and spreading acute or acuminate lobes. Common Tobacco. Cult in Cal.

***Fls w, g'ish or y'ish: cap septifragal, leaving the thin partition with the undivided placental column in center.

N. **RUSTICA** L, sp pl 180. B 1:545.

Rather stout, 1-25' hi: lvs petioled, ovate, or lower somewhat cordate, these oft 1' lg; panicle thyrsiform: ex broad with sh broad teeth, shorter than the globular at first only 2-valved cap; cor sh, broad, under 1' lg, hardly thrice as lg as ex, oblg-inflated from a sh nar base; lobes broad, reticulate-velny.

Waste grounds, Cal east and north, probably escaped from ab original cult.

NICOTIANA BIGELOVII S. Watson.

Wat bot king 276 t 27. B 1:546, 2:472. Ab 354. Da 12. Lake Co, Cal. Baja! Nev.

Cor 1-2 in. long, nearly as broad.

Viscid-pubescent; sts 3-6 dm hi; lvs oblong-lanceolate, sessile or nearly so, the lower 12-18 cm lg, with tapering base, the upper 4-8 cm lg, more acuminate, with acute or some with broader and clasping base; infl loosely racemiform; the upper fls bractless; ex-teeth unequal linear-subulate, about equaling the tube; cor w its tube 3-5 cm lg, narrow, with a gradually expanded throat, limb 5-angulate-lobed, 15-25 mm broad; fil somewhat unequally inserted hi up on the cor tube.

Variety **WALLACEI** A. Gray.

Cor smaller: leaves often nearly clasping.

NICOTIANA CLEVELANDI A. Gray.

G, syn Fl 2 (1):242. Greene, Cal ac b 3:408 Cruz. Ab 354. Br, Z 1:114 Cat. B 2:471.

Cor greenish w. violet tinged, 1 in. long.

Viscid-pubescent or st villous, 2-6 dm hi: lvs ovate or upper ovate-lanceolate, 5-8 cm lg, lower obtuse and with margined petiole not dilated at base, upper subsessile and gradually nar'ing from a broad and rounded or truncate base into an acuminate apex; bracts lanceolate; fls paniculate-racemose; ex-lobes linear, unequal; the longer fully twice length of tube, more than 1/2 length of cor; cor g'ish-w, tinged with vio, almost glab, 2-5 cm lg, salver-shaped, the somewhat 5-lobed limb 1 cm broad; fil slender, equally inserted low down on tube.

NICOTIANA ATTENUATA Torrey.

Wat, bot king 276 t 27. Ha 114. Cov 168.

Calyx shorter: cor longer, limb w. Type localities: "near Carson City," "Lake Washoe," "Fort Tejon." Nev and Cal.

A ft or 2 hi: lvs all petioled; radical oval or oblg; lower cauline ovate-lanceolate or nar'er; upper nar'ly lanceolate or linear and lg-tapering to point: fls

loosely panicked, shpedicelled: upper bracts minute or 0; ex with triangular-lanceolate teeth much shorter than tube and rather shorter than the 4-valves cap: cor 1' lg, nar salverform, with obtusely 5-lobed border a third to 1/2 in diam. Monterey Co. Baja! Colo.

NICOTIANA TRIGONOPHYLLA Dunal. Dunal, in DC 13 (1): 562 (1852).

Type locality: "in Mexico ad Aguas Calientes," state of Aguas Calientes.

Rather slender, 1-3' hi; lvs sessile, oblg, 2-4' lg, or upper smaller; lower obovate, with nar tapering articulate and partly clasping, upper with broader and more clasping base, raceme at length loose and virgate, with sm bracts sm or 0; pedicels rather unilateral: ex with subulate-lanceolate teeth, about equaling the ovate 4-valved cap: cor gish-w, under 1' lg, nar-tubular and gradually enlarging upwards, a little constricted at orifice, the very sh limb obscurely 5-lobed. CD! Mex, Tex.

**Trees.

NICOTIANA GLAUCA L.

A 1:96, 345d. Par 133.

. Cor tubular-funneliform, stamens unequally inserted.

Genus NITROPHILA S. Watson.

Wat, bot king 297 (1871).

Fls perfect, mostly 2-bracted: perianth of 5 (rarely 6 or 7) equal erect concave and carinate sep: sta 5, united at base into a very nar perigynous disk: anth 2-celled: staminodia 0: sty sh: stig 2, slender: utricle subglobose, indehiscent, 1-seeded, beaked by the persistent sty, included within connivent sep.

NITROPHILA OCCIDENTALIS S. Wat.

A low per branching glab herb; lvs opp, fleshy, amplexicaul; fls sessile, axy or shortly pedicellate. Ore, Nev, SD! Baja! not rare in alkaline soil. Wat, bot king 297. B 2:43. M 4:42.

Genus NOLINA Michx.

Per, with thick woody caudex or trunk oft elongated with a much dilated base, lvs nar-linear, mostly rigid, serrulate-margined: fl-st stout, nearly naked, bearing a compound racemose many-flid panicle, the main branches subtended by foliaceous lg-attenuate bracts; pedicels solitary, sh, jointed com near base, subtended by minute scarious bracts: fls sm, polygamo-dioec: per persistent, of 6 distinct oblg-lanceolate 1-nerved seg: sta 6, included, near base of seg, mostly 0 in fertile fls; fl sh, filiform; anth cordate-ovate, versatile, introse: ova sessile, deeply 3-lobed rudimentary in sterile fls; ovules 2 at base of each cell; sty very sh, distinct, recurved or slightly coherent, stigmatic on inner side: sds solitary, globose to ovate-oblg, with a thin light-colored slightly wrinkled or reticulated testa.

*Fr inflated, cells not burst by maturing sd.

NOLINA BIGELOVII S. Watson.

Wat 14:246. CD! Baja! Ar! B 2:163. Z 1:306.

NOLINA PARRYI S. Watson.

Wat 14:246. B 2:163. Ha 68. Z 1:306.

Probably identical with Bigelovii. CD.

**Fr smaller, soon bursting leaving sds exposed.

NOLINA PALMERI S. Watson.

Wat 14:246. B 2:163. SD Co! Baja mts! Covers large areas, appearing at a distance like a field of coarse grass. So-to-le of the Indians, rt and st used as a substitute for soap. Z 1:306.

Genus NOTHOLAENA R. Brown.

NOTHOLAENA CALIFORNICA Eaton.

NOTHOLAENA CRETACEA Liebm.

Southern California; Arizona; Mexico.

NOTHOLAENA NEWBERRYI Eaton.

Cotton fern, Southern and Baja Cal.

NOTHOLAENA PARRYI Eaton.

Arizona, Utah, Cal., Baja Cal.

NOTHOLAENA TENERA Gillies.

Southern California; Arizona; Utah.

NOTHOSCORDUM Kunth, Enum Pl 4:

457 (1843).

N. AUREUM Hook, bot mag t 5896. B

2:152 as Bloomeria a.

NOTHOLAENA Sibth & Sm, Fl Graec Prod 1:

361 (1808).

N. ADVENA Ait Jepson, Er 1:13. Parry,

Wyo 18. (Newberry, Pac Ry R 6:87 =

polysepalum fide B 1:17.)

N. POLYSEPALUM E. B 1:17, 2:428.

Parry, Wyo 18. Par 189. P 3:81.

NOTHOLAENA T & G.

N. CERASIFORMIS T & G. B 1:168. Z

2:260. Par 18.

NYCTAGINIA Choisy, in D C Prod 13

(2): 429 (1849).

N. TORREYANA Choisy. B 2:2 as Mir-

abilis multiflora.

OBIONE Gaertn, Fruct 2:198 t 126

(1791). = Attriplex fide IK.

O. ARGENTEA Moq, Chen En 71. B 2:53

as A: a.

O. BERLANDIERI Moq, DC Prod 13 (2):

114. B 2:55 as A: canescens.

O. BRACTEOSA D & H, Pac Ry R 5:13

t 14. B 2:52 as A: b.

O. CONFERTIFLORA T, Frem R 318.

B 2:55 as A: c.

O. COULTERI Moq. 113. B 2:53 as A: C.

O. HYMENELYTRA T, Pac Ry R 4:129

t 20. B 2:55 as A: h.

O. LENTIFORMIS T, Sitgr R 169 t 14.

B 2:54 as A: l.

O. LEUCOPHYLLA Moq, DC 13 (2):

109. B 2:53 as A: l.

O. MICROCARPA Bth, bot Sulph 43. B

2:52 as A: m.

O. OCCIDENTALIS Moq. B 2:55 as A:

canescens.

O. PHYLLOSTEGIA T, Wat bot king

291. B 2:51 as A: p.

O. POLYCARPA T, Pac Ry R 4:130. B

2:54 as A: p.

O. PUSILLA T, Wat bot king 291. B

2:52 as A: p.

O. SPINOSA Moq, DC 13 (2):108. B 2:

55 as A: confertiflora.

O. TETRAPTERA Bth, bot Sulph 43. B

2:55 as A: canescens.

O. TORREYI Wat, bot king 290. B 2:55

as A: t.

O. TRUNCATA T, Wat bot king 271. B

2:52 as A: t.

(**OBOLARIA** Sieg. = Linnaea Gronov.)

Obolaria L, sp pl ed 1, 632 (1753).

O. VIRGINICA L, sp pl 632.

OCIMUM L, Hort Cliff 315 (1737).

O. BASILICUM L, sp pl 597. B 1:590.

ODONTOSTOMUM T. Pac Ry R 4:150 (1856).

O. HARTWEGII T. lc. Cal. B 2:160.

Genus **OENANTHE** Linnaeus.

Syst ed 1 (1735. A 1:268 d.

OENANTHE CALIFORNICA S. Watson

Jepson, Erythraea 1:13.

Wat 11:139. A 1:168 d s. Da 7. B 1:264.

son, Er 1:13.

Variety **SARMENTOSA** Ab 287.

See OE. sarmentosa Californica.

OENANTHE SARMENTOSA Presl.

B 1:264. Z 1:9. A 1:269 d.

Fr ovate-globose, 1" long. Monterey Co, Cal, north.

Parish, Zoe 1:9.

Variety **CALIFORNICA** C & R, 82

A 1:269. Ab 287.

Abrams, Fl LA 287.

Oenanthe Californica S. Watson.

Jepson, Er 1:13.

OENOTHERA L, syst ed 1 (1735).

Herbs with alt lvs: fls various; ex-tube prolonged above ova, lobes reflexed, oft remaining somewhat united; pet 4, w turning to rose or y; sta 8, versatile; stg with 4 linear divisions or capitate. OE. ALBESCENS Wat 8:597. B 1:229 as Godetia a.

OENOTHERA ALBICAULIS Nuttall.

Wash to Mexico. S Ber (W. G. Wright)

E. Am J sc, sr 2, 34: 334. B 1:223.

Variety **CALIFORNICA** Wat 8:582. B 1:223 as sp. A 1:332 as Onagra C.

OE. ALYSOIDES H & A, bot Beech 340. Hook Ic t 339. B 1:226. A 1:330 as Sphaerostigma a. McClatchie. Er 2:123, Pasadena.

OE. AMOEBA Lilja. Linnaea 15:265. B 1:230 as Godetia a.

OE. ANDINA Nutt, T & G Fl 1:512. B 1:226 Parry, Wyo 3.

OE. ARBOREA K 2:32. Hesperian Mr 1860, f. Cur 1:137 as Hauya arborea:—"upper margin of sd oblique and terminated by a membranous wing of same length."

OE. ARCUATA K 1:58. Cur 1:137 as Godetia viminea spach.

OE. ARGUTA Greene, Fl Fr 212 (1891). Onagra arguta Small. Monterey, Cal, south.

OE. ARNOTII T & G Fl 1:504. B 1:229 as Godetia lepida var. A.

OENOTHERA BIENNIS Linn.

Ckl W 5:11. B 1:222. Z 2:162. 352. Par 182. Eu, Africa, India, Australia, Ore, Mex.

Throughout the U. S. east of the Rocky Mts: the Cal. plant is OE. Hookeri.

Variety **HIRSUTISSIMA** G. A 1:332 as Onagra Hookeri Small. Da 6.

OE. BILOBA Durand, Pl Pratten 87. B 1:231 as Godetia b.

OENOTHERA BISTORTA Nutt.

Suncups. Ha U 97. Cruz; Rosa.

T & G Fl 1:508. Par 142. B 1:225. Da 6. Br 1:210. P 1:88 Mig. Greene, Cal ac b 2:398. A 1:330 as Sphaerostigma bistorta Walp.

Variety **VEITCHIANA** Hook.

Da 6. San Diego! Baja!

A 1:332 as Sphaerostigma Veitchianum Small.

OE. BOOTHII Dougl, Hook Fl 1:213. B 1:227.

OE. BOTTAE T & G, Fl 1:505. B 1:231 as Godetia B.

OE. BREVIFLORA T & G, Fl 1:506. Parry, Wyo 12. B 1:224.

OENOTHERA BREVIPES A. Gray.

Colorado Desert; Utah; Arizona.

B 1:227. Ar, Ut, CD.

OENOTHERA CAESPITOSA Nuttall.

Oregon to Baja; N M; Nebr; Idaho.

B 1:224.

OENOTHERA CALIFORNICA S. Watson

Da 6. Ha U 97. Tijuana, Baja! Utah.

Anogra californica Small. Torr cl b 23:

176.

Par 50 t. B 1:223, 2:448. A 1:332 as Onagra C.

OENOTHERA CARDIOPHYLLA Torr.

Colorado Desert; Arizona; Baja.

B 1:227. CD. Ar, Baja.

OE. CEDROENSIS Greene, Cal ac b 1:

187. P 1:202 Cedros; Son.

OE. CHAMAENERIOIDES G Baja.

OENOTHERA CHEIRANTHIFOLIA

Hornem, bot reg t 1040. P 1:88 Mig.

Greene, Cal ac b 2:398 Cruz. Br 1:210

Rosa (cities OE. nitida Greene as one of

many forms).

B 1:225. Z 1:137. A 1:332.

Sand dunes near the sea, SF to Chili.

See Sphaerostigma spirale.

Variety **SUFFRUTICOSA** S. Watson.

Monterey to SD.

A 1:332 as Sphaerostigma viridescens.

OE. CLAVAEFORMIS T & G Pac Ry R

2:121. B 1:227 as scapoidea var. purpur-

ascens.

OE. CONTORTA Hook, Fl 1:214. B 1:226

as strigulosa.

OE. CORONOPOLIA T & G Ckl W 5:

11.

OE. CRASSIPOLIA Greene, Cal ac b 1:

188. P 1:290. Quintin, Magdalena Isl.

"A tall, graceful, shrubby sp, with a

very beautiful cor, pet 1' lg, light y, the

lower portion streaked with crim, the

whole drying deep or." Greene.

OE. CRASSIScula P 1:290, San Bar-

tolome bay.

OE. CRUCIFORMIS K 2:227. Cur 1:137

as scapoidea.

OENOTHERA DECORTICANS Greene.

Da 6. Utah; Arizona.

OE. DECUMBENS Dougl, Hook bot mag

t 2229. B 1:229 as Godetia lepida var.

parviflora Wat, Lindl, bot reg t 1221. T

& G Fl 1:504.

OE. DELTOIDEA T, Frem R 315. Wat,

bot king 107. B 1:224 as trichocalyx.

OE. DENSIFLORA Lindl, bot reg t 1593.

B 1:233 as Boissduvalia d.

OENOTHERA DENTATA Cav.

SF to Chili; Rosa.

Ic 4.67 t 398. Br 1:210. T & G Fl 1:511.

(B 1:226 = Sphaerostigma campestre

Small fide A 1:331.)

Variety **GRANDIFLORA** S. Watson.

Mohave!

Variety **CRUCIATA** Wat, 8:594. B 1:

226: "Pet narly obovate to oblq, oft

emarginate, 2" lg."

OE. EPILOBIODES Nutt, T & G Fl 1:

511. B 1:231 as Godetia e.

OE. EXIMIA G, Am ac mem ns 4:45. So

Cal (Parish 1828). = caespitosa fide IK.

OENOTHERA GAURAEFLORA T. & G.

Fl 1:510. B 1:227.

Off stout, erect, $\frac{1}{2}$ -2° hi, glab or inf and younger lvs sparingly puberulent: bark loose, w, shining; lvs lanceolate to narrowly oblanceolate, attenuate into the petiole, com denticulate: spk oft many-fid, nearly erect: cx-tube and obovate pet $1\frac{1}{2}$ -3" lg: cap attenuate from base to a nar beak, 8-15" lg: sds dark, 1" lg, angled.

Lower Sacramento; Utah; CD; Mohave!

OE. GLABELLA Nutt, T & G Fl 1:505. B 1:233 as *Boisduvallia* g.

OE. LACINIATA Hill.

Variety **GRANDIS** Britton, Ill Fl 2:487 (1897). M 3:60, SBER, cites var: *occidentalis* Small, T cl b 23:173 (1896), *sinuata* var: *grandis* Britton, mem T cl 5:358 (1894) et var: *grandiflora* Wat 8:381 (1873) as synonyms.

Variety **MEXICANA** Small, T cl b 23:173 (1896). M 3:61, SBER, cites *sinuata* var: *hirsuta* T & G Fl 1:494 (1840), as a synonym.

OE. GRACILIFLORA H & A bot Beech 341. B 1:225.

OE. GRANDIFLORA Ait, bot mag t 2068. B 1:223 as *biennis* var. g. (Wat 8:596. = *Whitneyi* fide IK.) B 1:229 = *Whitneyi*.

OE. GUADALUPENSIS Wat 11:137. B 1:226 Guad.

OE. HETERANTHA Nutt, T & G Fl 1:507. B 1:224, 2:448. Z 2:229.

Variety **TARAXACIFOLIA** Wat 8:589. M 1:1 as *Taraxia taraxacifolia*.

OENOTHERA HIRTELLA Greene. Sphaerostigma *hirtellum* Small Torr cl b 23:190.

Ha U 87. Lake Co. Fl Fr 215 (1891). Jepson, Er 1:10. Ha 97. A 1:331 s. Lake Co.

OE. HISPIDULA Wat 8:599. B 1:231 as *Godetia* h.

OENOTHERA HOOKERI T & G.

Ha V 98. Common in Cal. Cruz. Onagra *Hookeri* Small, Torr cl b 23:171.

Oenothera biennis hirsutissima Gray. Da 6.

Fl 1:493. B 1:223 as *biennis* var. *hirsutissima*. Small, Torr cl b 23:171 as *Onagra* H. M 4:80.

Greene, Cal ac b 2:398 Cruz, "same as the mainland plant com called a variety of *biennis*, which it can hardly be."

OE. LEPIDA H & A, bot Beech 342. B 1:229 as *Godetia lepidula*.

OENOTHERA LEPTOCARPA Greene. P 1:301 based on *Eulobus Californicus* Nutt. Da 6.

OE. LINDLEYI Dougl, Hook, bot mag t 2832. Lindl, bot reg t 1405. B 1:230 as *Godetia amoena*.

OE. MARGINATA Nutt, T & G Fl 1:500. Hook, bot mag t 5828. B 1:224 as *caespitosa* Nutt.

OE. MEXICANA. M 4:80.

OENOTHERA MICRANTHA Horn.

See *Sphaerostigma micranthum*.

T & G Fl 1:509. Da 6. B 1:226. A 1:331. **OE. MONTANA** Nutt, T & G Fl 1:500. B 1:224 as *caespitosa* Nutt.

OE. NEVADENSIS K 2:227 f 70. Cur 1:137. Reno, Nev.

OE. NITIDA P 1:70, 88 Mig. Z 1:137 S.

OE. NUTTALLII T & G Fl 1:506. B 1:224.

OE. OVATA Nutt, T & G Fl 1:507. B 1:225. Par 114 t.

OE. PALLIDA Lindl, bot reg t 1142. B 1:223 as *albicaulis*.

OE. PALMERI Wat 12:251. M 4:66.

OE. PARVULA B 1:226 as

OE. PRIMIVERIS G, Pl Wright 2:58, NM, Baja.

OE. PTEROSPERMA Wat, bot king 112 t 14. B 1:228.

OE. PURPUREA Curt bot mag t 352. B 1:229.

OE. PYGMAEA Dougl B 1:227 as *Boothii*.

OE. QUADRIVULNERA Dougl, bot reg t 1119. B 1:230 as *Godetia* q.

Variety **HIRSUTA** K 5:45. Cur 1:137 as *Godetia quadrivulnera*.

OENOTHERA REFRACTA S. Watson.

Colorado Desert (Parish; Calmali (Br).

OE. ROMANZOVII Ledebour. B 1:230 as *Godetia* R.

OE. ROSEA Ait, Hort Kew ed 1, 2:3. Baja, Peru.

OE. ROSEOALBA Bernh, Ind Sem Hort Erford (1824). B 1:230 as *Godetia amoena*.

OENOTHERA RUTILA Davidson.

Da, Er 2:62. A 1:40 fdr, 331 as *Sphaerostigma rutila* Parish.

OENOTHERA SCAPOIDEA Nuttall.

Oregon to Calamufet, Baja (Br). Utah.

B 1:227. Z 2:229. Parry, Wyo 3.

Variety **AURANTIACA** S. Watson.

Utah; CD; Arizona.

OE. SCRYPTOSTIGMA Br 2:156 Baja.

OE. SPECIOSA Nutt, J Phil ac 2:119 Baja.

OE. SPIRALIS Hook Fl 1:213. B 1:225 as *cheiranthifolia*.

OENOTHERA STRIGULOSA T. & G.

Da 6. Ha U 98. Wash to Baja. Nevada. B 1:226, 2:448. A 1:331 as *Sphaerostigma contortum*.

Variety **EPILOBIODES** Greene. A 1:331 as *Sphaerostigma contortum* variety *Greenei* Small.

OE. TANACETIFOLIA T & G, Pac Ry R 2:121. B 1:224 as *Nuttallii*.

OE. TORREYI Wat 8:600. B 1:233 as *Boisduvallia* T.

OENOTHERA TRICHOCALYX Nutt.

Oregon to Mexico; C D; Baja; Wyo, N M.

T & G Fl 1:494. B 1:224.

OENOTHERA TRILOBA Nuttall.

Oregon to Baja; Colo; Texas.

J Phil ac 2:118. B 1:224. Z 2:229.

OE. VIMINEA Dougl, bot mag t 2873. B 1:230 as *Godetia* v.

OENOTHERA VIRESCENS Hook.

Hook Fl 1:214. Da 6. = *cheiranthifolia* fide IK.

OE. VIRIDESCENS Lehm. A 1:332 as *Sphaerostigma* v.

OE. WHITNEYI G 7:340, 400. B 1:229 as *Godetia grandiflora*.

OE. WILLIAMSONII Wat 8:597. (Dur & Hilg, Pac Ry R 5:7 t 5 = *Godetia* W fide B 1:230.)

OE. TENELLA Cav Ic 4:66 t 396 f 2, Chilli. B 1:230 as *Godetia* t. (G 8:384 = *Godetia epilobioides* fide IK.)

OETOSIS

OE. ELONGATA P 4:106.

OE. ENSIFORMIS P 4:106.

- OE. ISOETIFOLIA** P 4:106.
OE. LINEATA P 4:106.
OE. ZOSTERAEOFOLIA P 4:106.
OLEA L, syst ed 1 (1735).
O. EUROPEA L, sp pl 8. Eu. B 1:471. cult.
OLIGOMERIS Cambess. A 1:126 d.
OLIGOMERIS GLAUCESENS Camb. Ab 183. A 1:126 d, 262. M 3:138 as ruderalis.
O. RUDERALIS M 3:138 based on *Elilimia* r Nutt, T & G Fl 1:125.
OLIGOMERIS SUBULATA Boiss.
 B 1:53. Da 3. Z 1:302. P 1:86 Mig; 200 Cedros. Greene, Cal ac b 2:391 Cruz. A 1:127, 262 as glaucescens (M 3:138 as ruderalis).
OLIGOTRICHUM DC.
O. LYALLII Lindb. B 2:402.

Genus **OLNEYA** A. Gray.

- Am ac mem ns, 5:328 (1855).
OLNEYA TESOTA A. Gray.
 G. lc. B 1:157. Ar, Son, C, Baja.
OLPIDIELLA UREDINIS M 1:19.
OMALANTHUS A. Juss, Euph T ent 50 t 16 (1824). = *Homalanthus* fide IK.
O. CAMPHORATUS Less, syn Corup 260. B 1:402 as *Tanacetum huronense* (T: *camphoratum* fide IK).
OMALOTES DC, Prod 6:83 (1837). = *Tanacetum* fide IK.
O. CAMPHORATA DC 6:84. B 1:402 as T: *huronense* (*camphoratum* fide IK).
OMYCEIUM
O. DENSUM Brackenridge, B 2:340 as *Pellaea densa*.

Genus **OPHIOGLOSSUM** Linnaeus.

- OPHIOGLOSSUM CALIFORNICUM** Prantl.
 Near San Diego, Cal.
OPHIOGLOSSUM PUSILLUM Nutt.
Ophioglossum nudicaule Sturm.
 S. C. to Fla. and La. Arizona.
O. VULGATUM L, B 2:332.
OPNOTERIS P 4:107.
OPSANTHES Lilja, Fl Luerig suppl 25 (1840). = *Clarkia* fide IK.
O. GAUROIDES Lilja, Linnaea 15:261. B 1:232 as *Clarkia rhomboidea*.
ONAGEA A 1:332 d.
O. CALIFORNICA Small. A 1:332 d.
O. HOOKERII Small. A 1:332 d. Ab 269.

Genus **OPUNTIA** Tournefort.

"Tube of the flower very short, cup-shaped; petals spreading or rarely erect; ovary with bristle-bearing areolae in the axils of small terete deciduous sepals; berry succulent or sometimes dry, marked with bristly or spiny areolae, truncate with a wide umbilicus; seeds large, white, compressed, with the embryo coiled round the albumen; cotyledons large, foliaceous.—Articulated, much-branched plants, of various shapes, low and prostrate or erect and shrub-like; young branches with small terete subulate early deciduous leaves, and in their axils an areola with numerous short easily detached bristles, and, usually, stouter spines, all barbed. Flowers on the joints of the previous year, on the same areolae with the spines, mostly large, open only in sunlight. Fruit often edible, often large."—E.

Subgenus **CYLINDROPUNTIA** E.—"Joints cylindrical, more or less tuberculated; rhabpe usually not prominent, therefore seed not margined; embryos forming less than one circle around the more copious albumen; cotyledons inconstant, contrary, oblique, or parallel to the sides of the seed."—E.

Subgenus **PLATOPUNTIA** E.—"Joints compressed; rhabpe forming a prominent bony margin around the seed; embryo completing a little more than one circle around the scanty albumen; cotyledons contrary to the sides of the seed."—E.

OPUNTIA BERGERIANA.

Shrub 5-10 feet high; joints obovate or oblong-ovate, 9 inches long, half as broad; spines variable in number and size, 1 or more over an inch long, spreading; flowers very numerous at top of joints, outer segments greenish-red, inner deep bright-red, over 1 inch long. Very common in gardens of the Riviera, most nearly allied to *Opuntia nigricans* (MfK 1904, 59. GC 1904, xxxv. 34 f 14).

OPUNTIA BERNARDINA Engelm.

"Loosely branched shrub, 2-4 ft high, several stemmed from the base; joints cylindrical, 3-12 in. long, with a slight scurfy pubescence, never deciduous; tubercles of the younger joints oblong and very prominent, shorter and less marked on the older; spines yellow, $\frac{1}{4}$ -lin. long, 1 or 2 usually longer and stouter than the others; fis in a dense cluster at the ends of the previous year's joints; inner segments of the perianth yellow, outer greenish, or dull red; fr ovate, less than an inch long, deeply umbilicate, the tubercles bearing a single short spine, becoming at length dry, and only then deciduous, usually fertile, but few-seeded; seed flat, $\frac{1}{4}$ in. in diam, the rhabpe channelled. Parish, Torr cl C 19:92. Dry hills and mesas, SBer.

OPUNTIA HANBURYANA.

Shrub 3-5 ft. high, of straggling growth; joints lanceolate-oblong, variable in size, the largest 11 inches long, scarcely 4 broad; spines several, large, spreading, somewhat compressed and twisted; outer perianth-segments deltoid, the innermost obovate, obtuse, mucronate, canary-yellow. Not common in gardens of the Riviera, distinct on account of its habit, long spreading spines, and the small ovary and fruit (GC 1904, xxxv. 34 f 15. MfK 1904, 59). **OPUNTIA LARREYI** Weber.

"Plant only 9-12 dm high, with large orbicular glaucous joints; fruit 'as large as a goose egg', juicy, pulpy, and with purple pulp; seeds small 'much like those of *O. ficus indica*'. Type unknown. A Mexican species, found by Dr. Weber about Queretaro, and pronounced by him the most delicious of all the fruits he had tasted. Known as 'camuessa'.—Coulter, Cont Na hb 3:423.

Opuntia Lucayana.

Britton, NY bot gard b 4:141, describes this from the Bahama Islands

as follows:—"Related to *O. Dillenii* and *O. Tuna* and growing with them. Stems ascending, often forming dense clumps; joints various, linear-oblong to obovate, often 5 dm. long, 10-15 cm. wide, olive-green, slightly lustrous, more or less crenate, about 1.5 cm. thick, knobbed at the areoles; areoles distant, nearly 1 cm. broad, white-velvety; glochides numerous, yellow, 6 mm. long or less, mostly borne at the upper margins of the areoles; spines 3-8 at each areole, light-yellow, flattened on the upper side, subulate, straight, often somewhat twisted, the longer ones 12 cm. long or less; flowers yellow, 7-8 cm. broad; stamens about half as long as the petals; ovary narrowly pyriform, 4-5 cm. long; its upper areoles bearing 1-3 subulate pale-yellow spines 2.5 cm. long, or less, which are sometimes persistent on the fruit; berry pyriform, 5-6 cm. long, 2-3 cm. in diameter. Grand Turk (Nash & Taylor, 3834, type; 3833, 3841). *O. Dillenii* has stouter, shorter, dark-yellow or yellow-brown spines. *O. Tuna* has much shorter nearly terete spines."

OPUNTIA PALMERI Engelm.

"Joints oval, smooth (not tuberculated), pale glaucous, 20-25 cm long by 15-20 cm broad; pulvini 2.5-3 cm apart, with pale brownish or gray persistent wool, a few very slender straw-colored bristles, and slender flattened or compressed straw-colored spines 2.5-3 cm long (5-7 on upper pulvini with some smaller additional ones, 1-2 on lower pulvini), erect or spreading, or the upper ones (from upper part of pulvinus) mostly deflexed. Type, Palmer of 1877 in hb Mo bot gard. Near St. George, Utah."—Coulter, Cont Na hb 3-423.

OPUNTIA RUBRIFOLIA Engelm.

"Prostrate, with thick ovate joints 12-15 cm long by 10 cm broad, not tuberculated; leaves spreading, somewhat recurved, reddish, 8-10 mm long; pulvinl 2-2.5 cm apart with brownish-gray persistent wool and numerous yellowish bristles (especially on the upper edge); spines often twisted, 2.5-6 cm long, often a few additional smaller ones, all deflexed (almost appressed; flowers and fruit unknown. Type, Palmer 3 in hb Mo bot gard. St. George, Utah."—Coulter, Cont Na hb 3:424.

OPUNTIA SCHUMANNI.

Shrub 4-5 ft high; joints obovate-oblong, 12 inches long, 5 broad; spines several, slightly compressed and twisted, the longest $1\frac{1}{2}$ -2 inches long; flowers terminal and lateral, $2\frac{1}{2}$ inches long; outer perianth-segments deltoid, fleshy; inner obovate-spathulate, yellowish, turning to a dull red. Intro-

duced by L. Winter (GC 1904, xxxv. 34, f 16. MFK 1904, 60). Allied to *Opuntia nigricans*.

OPUNTIA TESAJO Engelm.

"With very short woody stem, and growing in little clumps 3 dm or less in diameter; joints slender and not distinctly tuberculate; flowers simple, bell-shaped, yellow. Type, Gabb 26 in hb Mo bot gard. Among rocks, especially toward the west coast and in the more central portions, Lower California."—Coulter, Cont Na hb 3-448.

OPUNTIA TRELEASII Coulter.

"Erect, diffusely branching; joints orbicular to obovate, fleshy, with terete base, 15-25 cm long; pulvini not depressed, with long (5- cm) dense dirty-yellow bristles; leaves on young shoots 5 mm long, spreading (more than twice as long as those of *basilaris* and darker-red); flower and fruit not seen.—Type, growing in Mo. Bot. Gard. 1892, from collection made by Trelease in 1892. At Caliente, in the Tehachapi Mountains, California. Specimens examined: California (Trelease of 1892). This species is near *O. basilaris*, but differs in its rounder more fleshy joints (terete below), pulvini not depressed (in *O. basilaris* there is a depression for the pulvinus with a furrow on either side in the general surface), yellowish bristles, and especially in its much larger leaves."—Coulter Contr na hb 3:434-435.

ORCHIASTRUM Lem, in Illustr Hort 2 Misc 96, 100 (1855). = *Lachenalia* fide IK.

O. ROMANZOFFIANUM M 1:129 S.

ORCHIS L, syst ed 1 (1735).

O. ELEPHARIGLOTTIS Willd, sp pl 4:

9. M 1:127. = *Habenaria ciliaris* fide IK.

ORECUTIA Vasey. A 1:367 fdr.

O. CALIFORNICA Vasey. A 1:367 fdr.

OREASTRUM

O. ALPIGINUM P 3:147.

O. ANDERSONII P 3:147.

O. ELATUM P 3:147, 4:107 S.

ORECARYA P 1:57.

O. ABORTIVA P 3:114.

Parish Er 7:95. SBER mts. "Whole plant more or less sparsely hispid, as well as silky canescent; nutlets com all maturing, and then loosely connivent, and less incurved than when by abortion solitary; their dorsal surfaces entirely smooth. Originally characterized by abnormal specimens in which all but 1 of the nutlets had aborted."

O. AFFINIS P 3:110.

O. BAKERI P 4:92.

O. CINEREA P 3:113.

O. CONFERTIFLORA P 3:112.

O. EASTWOODAE M 3:141. Nev, Ut,

Wash.

O. FULVOCANESCENTES P 1:58 based on

Eritrichum f. P 3:111.

O. GLOMERATA P 1:58 based on *Cynoglossum* g. P 3:109.

O. HOLOPTERA P 1:58 based on *Eritrichum* h.

O. HUMILIS P 3:112.

O. INTERRUPTA P 3:111.

O. LEUCOPHAEA P 1:58 based on *Myosotis* l.

Variety *CONFERTIFLORA* Parish, Er

7:95, based on *O. confertiflora*. P 3:112.

The subcapitate infl of type of *O.*

confertiflora was exceptional; normally glomerate-spicate, distinguished by its broad depressed nutlets; those of the species acute. Sber mts, desert slopes (Parish); Argus mts, Inyo Co. (Purpus).

O. LUTESCENS P 4:93.

O. MULTICAULIS P 3:114.

O. NUBIGENA P 3:112.

O. PALMERI P 1:57 based on Krynitzkia P.

O. SERICEA P 1:58 based on Krynitzkia s.

O. SETOSISSIMA P 1:58 based on Eritrichium and Krynitzkia G.

O. SUFFRUTICOSA P 1:57 based on Myosotes suffruticosa T. P 3:113.

O. THYRSIFLOEA P 3:111.

O. VIRGATA P 1:58 based on Eritrichium virgatum T. C. Porter.

OREODAPHNE Ness & Mort, Linnaea 8:39 (1833). = *Ocotea* fide IK.

O. CALIFORNICA Nees. B 2:61 as Umbellularia, Cal.

OREOPHILA Nutt, T & G Fl 1:258 (1840) = *Pachystima* fide IK.

O. MYRTIFOLIA Nutt, lc 259. B 1:99 as P. myrsinites.

OREOSTEMMA

O. ALPIGENUM P 4:224.

O. ANDERSONII P 4:224.

O. ELATUM P 4:224.

O. KAYDENI P 4:224.

ORNIITHOGALUM L, syst ed 1 (1735).

O. DIVARICATUM Lindl, bot reg (1841) Misc 53. B 2:160 as *Chlorogalum pom-eridianum*.

O. IXIOIDES Ait, Hort Kew ed 2, 2:257. B 2:155 as *Brodiaea* i.

Genus **OREOBANCEA** L. innaeus.

Glandular-pubescent, erect, simple or branched herbs, parasitic on rts of various plants, with scattered scales, and spicate or racemose perfect bracted and sometimes bracteolate fls; cx split both above and below, nearly or quite to base, the divisions 2-cleft or rarely entire, or more or less unequally 2-5-toothed; cor oblique, strongly 2-lipped; upper lip erect, emarginate or 2-lobed; lower lip spreading, 3-lobed. Sta included; anth-sacs mostly mucronate at base. Ova ovoid; sty slender, com persistent; stig pellate to funnelform, entire or slightly 2-lobed.

O. CALIFORNICA C & S, Linnaea 3:134. Ab 375. LA. B 1:584 as *Aphyllon* C.

Viscid-pubescent; sts stout, com simple, 5-15 cm hi; fls crowded in a dense raceme; pedicels 2-4 or the lower sometimes 10 cm lg; bractlets close to cx; cx-seg linear-lanceolate, about equaling the y'ish or p'ish cor, this 2-2.5 cm lg; anth glab or slightly hairy.

O. COMOSA Hook Fl 2:92. B 1:584 as *Aphyllon* c.

O. FASCICULATA Nutt, Gen 2:59. B 1:584 as *Aphyllon* f.

O. LUDOVICIANA Nutt, Gen 2:58. B 1:585 as *Aphyllon* L.

O. MULTIFLORA Nutt, Phil ac J. ns, 1:179. B 1:585 as *Aphyllon* m.

O. PINETORUM Wat. B 1:585 (error for *Pinorum* Geyer) as *Aphyllon pinetorum*.

O. TUBEROSA Heller. Ab 375. = *Aphyllon* t.

Pruinose-puberulent; sts stout, with a

less; spikes dense, corymbose-glomerate at summit of thickened st; fls subsessile or on sh pedicels; cx-lobes lanceolate, equalling cor-tube; cor y'ish, about 10-15 mm lg; anth glab.

O. UNIFLORA L, sp pl 633. B 1:584 as *Aphyllon* u.

OREBUS L, syst ed 1 (1735). = *Lathyrus* fide IK.

O. LITTORALIS G, Pac Ry R 12 (2):58. B 1:160 as L: 1.

Genus **ORTHOCARPUS** Nuttall.

Gen 2:56. A 1:234 d.

ORTHOCARPUS ATTENUATUS A. Gry. G, Pac Ry R 4:121. Baja mts! B 1:576.

O. BICOLOR M 1:59.

O. BIDWELLII G 15:51. B 2:475.

O. BEACTEOSUS Bth, Scroph Ind 13. B 1:577.

O. BELDIN GII Greene, Cal ac b 1:123 as *Clevelandia* B.

O. CAMPESTRI S Bth 329. B 1:579.

O. CASTILLEIODES Bth, Scroph Ind 13. B 1:576.

O. CUSPIDATUS P 4:101.

ORTHOCARPUS DENSIFLORUS Benth. DC 10:536. Par 234. P 1:92 Mig.

B 1:576. A 1:234 d. M 3:118.

Greene, Cal ac b 2:409. Cruz.

Abrams, Fl LA 371. Hills near LA (Greata).

O. ERIANTHUS Bth, Scroph Ind 12. Par 155. B 1:578. M 3:61 LA Co.

ORTHOCARPUS EXSERTUS Heller.

M 1:109. A 1:234 fdr.

O. FAUCIBARRATUS G, Pac Ry R 4:121. B 1:579. = *erianthus* fide IK.

O. FLORIBUNDUS Bth, Scroph Ind 12. B 1:578.

O. GRACILIS Bth, Scroph Ind 12. B 1:579.

ORTHOCARPUS HISPIDUS Benth.

Bth, Scroph Ind 13. B 1:580. (Wat, bot king 230 = in part *lacerus* fide B 1:579.)

San Diego foothills (Parish 409).

O. IMBRICATUS Wat, bot king 458. B 1:577 as *tenuifolius*. P 4:101.

O. LACERUS Bth 329. B 1:579.

ORTHOCARPUS LASIORHYNCHUS

G 12:82. B 2:476. A 1:235 d. Hall 118, Cuyamaca.

Mohave (Palmer, Parry, Lemmon).

Parish, Zoe 5:118, says Sber mts not Mohave.

Southern Cal (Parish 482); Baja!

Orthocarpus Parishil A. Gray.

O. LINEARILOBUS Bth 330. B 1:569.

O. LITHOSPERMOIDES Bth, Scroph Ind 13. B 1:579.

O. LUTEUS Nutt, Gen 2:57. B 1:577.

O. PACHYSTACHYUS G, syn Fl 2 (1):300. B 2:475. P 4:101.

O. PALLESCENS G. Am J sc, 34:339. B 1:576. Parry, Wyo 24.

ORTHOCARPUS PARISHII A. Gray.

G 17:229. J ac. Ab 371. A 1:235.

See *Orthocarpus lasiorhynchus*.

Parish, Z 5:118 says Cuyamaca not J ac. Baja! SD!

O. PARRYI G, ex Parry, Wyo 24, 18.

"Differs from *o. pallescens* Gray in somewhat greater height (almost a foot hi) and in the close and sh cinereous pubescence; cor broader and y'ish, its more decidedly trisaccate lower lip equalling in length the broad galea, its

3 lobes equal, oval, obtuse, about the length of the saccate portion.—Pacific Springs, etc. Fls 7" lg; the lower rather distinct, in the axils of g and foliaceous laciniate-pinnatifid bracts; ex 2-cleft to the middle, nearly equalling the y'ish cor and apparently slightly y'ish." B 1:576 as.

ORTHOCARPUS PAUCIBARBATUS G. S F; San Diego mts (Parish 408).

O. PILOSUS Wat, bot king 231, 459. B 1:576. Cal.

ORTHOCARPUS PURPURASCENS Bh. Bth, Scroph Ind 13. B 1:578, 2:475. Da 13. Ab 370. Par 234 t. Br 1:215 Rosa. A 1:235 d. M 4:59.

Humboldt Co to Baja! Rosa.

O. PURPUREO-ALBUS Wat, bot king 458. B 1:578.

O. FUSILLUS Bth, Scroph Ind 12. B 1:578.

O. STRICTUS Bth, Scroph Ind 12. B 1:577 as luteus.

O. TENUIPOLIUS Bth, Scroph Ind 12. (B 1:577 =imbricatus fide IK.)

O. TOLMIEI H & A, bot Beech 379. B 1:578.

O. VERSICOLOR Par 234 t.

ORTHOTRICHUM Hedw.

O. ALPESTRE Hornsch. B 2:384.

O. ANOMALUM Hedw. B 2:383.

O. BOLANDERI Sulliv. B 2:384.

O. COLUMBICUM Mitten B 2:385 as pulchellum.

O. CONSIMILE Mitt. Vancouver Isl. B 2:385.

O. COULTERI Mitten, J L sc 8:25. B 2:384 as cylindrocarpum.

O. CRISPUM Hedw. B 2:382 as Ulota cripula.

O. CUPULATUM Hoffm. B 2:382.

O. CYLINDROCARPUM Lesq. B 2:384.

O. ELEGANS Schwaegr. B 2:384 as speciosum.

O. JAMESIANUM Sulliv. B 2:383.

O. KINGIANUM Lesq. B 2:385.

O. LAEVIGATUM James. B 2:385 as Kingianum.

O. LYEII Hook & Taylor. B 2:385. Eu, Ore.

O. OCCIDENTALE James B 2:384 as alpestre.

O. PAPILLOSUM Hampe. B 2:385 as Lyeii.

O. PHYLLANTHUM Bruch & Schimp. B 2:382 as Ulota p.

O. EIVULARE Turner. B 2:384.

O. RUPESTRE Schleich. B 2:383.

O. SPECIOSUM Nees. B 2:384.

O. STURMII Hoppe & Hornsch. B 2:382.

O. TEXANUM Sulliv. B 2:383.

O. WATSONI James. B 2:383.

O. HENDERSONI Bot gaz 7: Z 1:63.

O. ULATAEFORME Bot gaz 7: Z 1:63. **ORYCTES** Wat, bot king 274 t 28 (1871).

O. NEVADENSIS Wat lc. B 1:542.

OSCILLATORIA

O. TRAPEZOIDEA Tilden. Torr cl b 23:58 (F 1896). Pasadena.

OSMADENIA Nutt, Am phil sc tr, ns. 7:391 (1841). =Hemizonia fide IK.

O. TENELLA Nutt, lc 392. B 1:365 S. A 1:193 as Calycadenia t.

OSMARONIA Greene. =Nuttallia T & G. **O. CERASIFORMIS** P 2:191. 5:309.

Variety **LANCIFOLIA** P 5:309.

Variety **NIGRA** P 5:309.

O. OBTUSA P 5:310.

O. BRACTEOSA P 5:310.

O. DEMISSA P 5:310. M 3:49, Oso berry.

O. LAURINA P 5:311.

O. PADIFORMIS P 5:311.

Genus **OSMORRIZA** Rafinesque.

A 1:269 d. =Myrrhis Moris.

Washingtonia Raf, fide Britton.

OSMORRIZA BRACHYPODA Torr.

Torrey, Pac Ry R 4:93.

Sber Co (Parish 985, 1945); Nevada Co.

Washingtonia brachypoda Heller, Cat NA pl 99.

Abrams, Fl LA 281.

Da 7, B 1:262. A 1:269 d. Central Cal.

O. BREVISTYLIS Hook A 1:269 as

OSMORRIZA NUDA Torr.

B 1:262. A 1:269 d.

Torrey, Pac Ry R 4:93.

Brewer & Watson, bot Cal 1:262. Mts SD Co; Ak; Colo.

Hall, U 98.

Osmorhiza brevistylis Hooker, Fl 1:272 in part, t 97.

Washingtonia nuda Heller, Cat N A pl ed 1, 5.—C-R Mon N A Umb 64.—Hall, U 98.

O. OCCIDENTALIS Z 2:229.

OUREISIA

O. CALIFORNICA B 1:516 s. P 5:44 s.

Genus **OXALIS** Linnaeus.

Sep imbricated, regular: pet hypogynous: sta 10, monadelphous at base, 5 sh'er, all antt-bearing: ovules several in each cell; sty 5, distinct, persistent; stig terminal: sds with a loose aril-like dehiscent outer coat. Wood-sorrel.

O. ACETOSELLA Hook Fl 1:118. B 1:96 as in part Oregana.

OXALIS CORNICULATA Linn.

L, sp pl 435. Ab 229. B 1:96. Par 202. M 3:4.

Ann, caespitose, prostrate, rt'g at nodes, somewhat rough-villous; lfsts 6-10 mm lg, mostly broader; stipules evident, rounded or truncate, at summit, adnate; fls 6 mm lg, solitary or umbelled, otherwise as in *O. Wrightii*. Occasional about lawns and greenhouses. Yellow sorrel. Ore, Mex.

Described as per by running rtstocks by Jepson, Fl W M Cal 245.

Variety **ATROPURPUREA** Planch. M 3:4, Sber.

O. DIMIDIATA Smith, bot gaz 7: Z 1:63, Guatemala.

O. LATIFOLIA HBK. Baja.

OXALIS OREGANA Nutt.

B 1:96. Par 202 t. Cruz.

Per herbs forming mats, with slender rt-stalks from which arise the lvs and flg-sts: lfsts broadly obcordate, rusty beneath: scapes com 1-fld, with 2 bracts near flt: pet near 1' lg, pink, w or rose with darker veins: Wash. south.

O. PUMILA Nutt. M 3:4.

O. STRICTA L. B 1:96 as corniculata.

O. SUKSDORFII Trelease. Small, Torr cl b 1896: 456 cites pumila et pilosa Nutt as synonyms.

OXALIS WRIGHTII A. Gray.

Pl Wright 1:27. Ab 229. Da 4. Br 1:202 Cruz. SBar, SF. Parish. Er 3:60 Monica. Baja! M 3:4.

Cespitose per, the prostrate and rt'ing or ascending sts suffrutescent and more or less branched below, 15-20 cm lg or more, from a sh. erect, woody st; lvs 3-foliate; lflets 4-10 mm lg, oft broader; petiole somewhat stipular-dilated at base; fls 6-10 mm broad, y, 1-3 on elongated, axy peds which are sh-bracteate at summit; pet obovate, twice as lg as cx, cm emarginate; cap oblg, 1-1.5 cm lg. Baja.

OXYBAPHUS L Herit ex Willd, sp pl 1:185 (1797).

O. PROEBELII Behr, Cal ac pr 1:69. B 2:2 as *Mirabilis Californica*. Cur 1:124 et Greene, Cal ac b 1:124 as *Mirabilis Froebelii*. A 1:278 S.

O. GLABRIFOLIUS Vahl, En 2:40. Variety **CRASSIFOLIUS** Chosy. B 2:3 as *Mirabilis Californica*.

O. LAEVIS Bth. B 2:3 as *Mirabilis Californica* "probably." A 1:278 S.

O. MULTIFLORUS T. Ann NY Lyc 2: 237. B 2:2 as *Mirabilis* m. A 1:278 S.

OXYBAPHUS NYCTAGINEUS Sweet.

Cantilles (Or 1194).

Genus **OXYGRAPHIS** Bunge.

Per herbs with crenate, dentate or lobed, lg petioled lvs and sm y fls, solitary or 2-7 together on scapes or scape-like ped; sep cm 5, spreading, at length decid; pet 5-15 with a nectar-pit near base of each; sta and pistils num; hd of fr oblg or oval or rarely subglobose; ak compressed, longitudinally striate, without a hard coat.

O. CAMBALARIA Prantl.

Low, glab, spreading by runners; lvs mostly basal, slender petioled, cordate-oval or reniform, crenate, 4-18 mm lg; scapes 3-12 cm lg, sometimes bearing 1 or more lvs at base; fls 1-7, 6-8 mm broad; hd of fr oblg, 6-16 mm lg, ak compressed, somewhat swollen, distinctly striate, minutely sharp-pointed.

Ab 154. Mr-Jl. Frequent.

Ranunculus Cymbalaria Pursh.

Halerpestes Cymbalaria P 4:208.

OXYRIA Hill Vegl syst 10:24 t 24 (1765).

O. DIGYNA Campdera. B 2:7. Ha 74. Alpine sorrel. A 1:365. Hill, Hort Kew 158.

O. RENIFORMIS Hook Fl Scot 111. B 2:7 as *digyna*.

OXYSTYLIS T & Frem, R Frem app 312 (1845).

O. LUTEA T & F, lc, 313. M 4:61. B 1:53.

OXYTENA Nutt, Phil ac J ns, 1:172 (1847).

OXYTENA ACEROSA Nutt.

Nutt, lc. B 1:343. Br Colo 230.

Dry plains, Colo; Cal deserts.

Genus **OXYTHECA** Nuttall.

A 1:239 d.

O. APICULATA Wat. B 2:32 (error for *spiculata*).

O. DENDROIDEA Nutt, Phil ac J, ns, 1:169. B 2:32. Parry, Wyo 4, Nev, Chili.

OXYTHECA CARYOPHYLLOIDES Pry. Dav ac pr 3:2. A 1:79 fdr. Ha 74.

OXYTHECA EMARGINATA Hall.

A 1:80 fdr.

O. HIRTIFLORA Greene, Fl Fr 153. Jepson, Er 1:12. 14.

O. INERMIS Wat 12:273. Cov 189. A 1:78 as *Eriogonum vagans*. B 2:32.

OXYTHECA LUTEOLA Parry.

A 1:80 fdr.

OXYTHECA PARISHII Parry.

A 1:19 fdr, 279 as *Acanthocyphus* P. Da 15.

OXYTHECA PERFOLIATA T. & G.

G 8:191. Cov 189. B 2:32. A 1:240.

Utah; Nevada; Mohave; CD.

Type locality: "Unionville, Humboldt and Truckee valleys, on the borders of the desert." Nev.

OXYTHECA TRILOBATA A. Gray.

B 2:32. A 1:240d.

Abrams, Fl LA 116. Sber and SD Co. SanBer Co (Parish 600). Ha U 76.

O. WATSONI T & G, B 2:32. Nev.

OXYTERYX

O. ABRICOLA P 3:235.

OOKOPSIS

O. ENGELMANNI P 3:45.

O. FOLIOSA P 3:46.

OXYTROPIS DC P 3:209 as *Arangallus*

O. WARDI P 3:46.

OXYTROPIS DC P 3:209 as *Aragallus* (Necker).

O. ARCTICA R Br, App Parry Voy 278. P 3:211 as A: a. G 20:4.

O. CAMPESTRIS DC Astr 74. Parry, Wyo 6, 7, 10, 11. P 3:211 as A: c.

O. FOETIDA DC, Astr 75. P 3:211 as A: f.

O. GRANDIFLORA DC, Astr 71. P 3:210 as A: g.

O. LAGOPUS Nutt, T & G Fl 1:340. Parry, Wyo 5. P 3:212 as A: L.

O. LAMBERTI Pursh, Fl 2:740. Ckl W 5:11. P 3:212 as A: L.

Variety **BIGELOVII** G 20:7. P 3:212 as A: B.

Variety **LILACINA** Ckl W 5:11.

Variety **SERICEA** Ckl W 5:11.

O. LEUCANTHA Pers, Syn 2:331. P 3:211 as A: l.

O. MERTENSIANA Turcz, Mosc b 1840, 68. P 3:211 as A: M. G 20:4. Bunge, Oxytr 116.

O. MONTANA DC, Astr 66. P 3:210 as A: m.

O. MONTICOLA G 20:6. P 3:212 as A: m.

O. NANA Nutt, T & G Fl 1:340. Parry Wyo 17. P 3:212 as A: n.

O. PARRYI G 20:40. P 3:211 as A: P.

O. SERICEA Nutt, T & G Fl 1:339. P 3:212 as A: S.

O. SONGARICUS DC, Astr 73. P 3:211 as A: S.

O. SPLENDENS Dougl, Hook Fl 1:147. P 3:211 as A: S.

O. URALENSIS DC Astr 68. P 3:210 as A: u.

O. VERTICILLARIS DC, Astr 88. P 3:211 as A: v.

O. VISCIDA Nutt, T & G Fl 1:341. G 20:4. P 3:211 as A: v. Parry, Pl Wyo 7.

OXYURA DC 5:693 (1836) = *Layia* fide IK.

O. CHRYSANTHEMOIDES DC lc. B 1:370 as L: c.

PACHYLOPEUS

P. LONGIFLOEUS M 4:40 based on *Anogra* l (M 2:224).

PACHYPODIUM Lindl, bot reg t 1321 (1830).

[Nutt, T & G Fl 1:96 (1838) = *Thelypodium* fide IK.]

P. INTEGRIFOLIUM Nutt, ex T & G Fl 1:96. B 1:37 s. A 1:114 as *Thely-*

podium i.

P. LACINIATUM Nutt, lc. B 1:38 as Thelypodium l.
P. SAGITTATUM Nutt, T & G Fl 1:97. B 1:37 as Thelypodium S.
PACHYANDRA Michx Fl 2:177 (1803).
P. FEOCUMBENS Michx Fl 2:178 t 45. B 2:66.
PACHYSTIMA Rafin ex, Endl Gen Suppl 1:1424 (1841). — *Pachistima* fide IK.
P. MYRSINITES Rafin. B 1:99. Br Colo 228.

Genus **PAEONIA** Linnaeus.

L. syst 1 (1755). A 1:257 d.
PAEONIA BROWNII Douglas.
 Abrams, Fl LA 152. — "Occasional in the foothills throughout our range. Mr. Ap."
 B 1:13. Par 346 t. A 1:84, d 257 d.
PAEONIA CALIFORNICA Nuttall.
 Nuttall, in T & G Fl 1:41 (1838).
 Bloch, Erythea 2:163, note on medicinal repote.
 Da 1. A 1:257 d. B 1:13 as Brownii.
 Usually distributed as *P. Brownii*.
 Type locality: "margins of bushy plains, and in valleys of the mountains, in the vicinity St. Barbara, Upper California."

Genus **PALAFOXIA** Lagascea.

Gen ed sp Nov 26 (1816).
P. LEUCOPHYLLA G 8:291. — linearis fide IK. B 1:388.
PALAFOXIA LINEARIS Lagascea.
 CD, Arizona; Calmali (Br).
 Lag, lc. Mex. B 1:388, 2:457.
PALMERELLA G. A 1:106 d.
P. DEBILIS G 11:81. B 1:619. A 1:106 d. Z 1:373. P 1:297 as Lobelia Dunnii.
 Variety **SERRATA** G, Wheeler's R 367. K Br Z 1:83. Ab 389. A 1:107 d. P 1:297 as Lobelia Rothrockii.
P. TENERA G 22:433. P 1:297 as Lobelia Palmeri.
PAPAVERACEAE A 1:257 d.
PAPAVER L. syst ed 1 (1735). A 1:155d.
P. CALIFORNICUM G 22:313. Par 120. P 1:167. Ab 163. A 1:74, 155 d. Bingham, bot gaz 12:67. M 3:75.
P. HETEROPHYLLUM P 1:168 based on Meconopsis heterophylla Bth. A 1:155 d, 161.
PAPAVER LEMMONI Greene.
 P 1:168. A 1:74 fdr. 155 S.
P. MACCOUNII P 3:247.
P. RHOEAS L. sp pl 507. B 1:19.
P. SOMNIFERUM L. sp pl 508. B 1:19.
PAPPOPHORUM Schreb, Gen 2:787 (1791).
P. WRIGHTII Wat 18:78. Beal, grasses N A 2:448 LA. Parish, Z 5:111 not LA but Los Angeles bay, Baja. Calmali, common on rocky slopes.

Genus **PAKETARIA** Tournefort.

A 1:223, 224 d.
PAKETARIA DEBILIS Forst.
 Da 16. Ab 169. B 2:65. Greene, Cal ac b 2:411 Cruz. Br 1:216 Rosa. A 1:224 d.
 Forst, Fl Ins Aust Prodr 73 (1786).
 Type locality: "Nova Zeelandia."
 Coville CNH 4:195. Funeral mts.
P. PENNSYLVANICA Muhl ex Willd sp pl 4:955. B 2:65.

PARISHELLA G, bot gaz 7:94 (1882). Z 1:377.

PARISHELLA CALIFORNICA A. Gray. G, lc. A 1:6 d.

Genus **PARKINSONIA** Linnaeus.

PARKINSONIA ACULEATA Linn.
 L. sp pl 375. B 1:162. CD. Baja. Tex. Mex. naturalized or cult in most tropical regions.
P. FLORIDA Wat 11:135. B 1:162. Baja?
P. MICROPHYLLA T. Pac Ry R 4:82. B 1:162. Ft Yuma Ar.
PARKINSONIA TORREYANA S. Wat.
 Wat 11:135. B 1:162.
PARNASSIA L. syst ed 1 (1735).
P. CIRREATA Piper. A 1:39 fdr.
P. FIMBRATA Koenig. Hook, bot misc 1:43 t 23. Par 112. B 1:202, 2:446. Nev, Colo, Brit Am. (Parish 156 = cirrata.)
P. PALUSTRIS L. sp pl 273. Eu. B 1:302.
PABONYCHIA L. syst ed 1 (1735).
P. FUSELLA P 1:302, Cal.
P. RAMOSISSIMA DC mem Pero 12 t 4. B 1:72 as Pentstemon r.
PABROSIA Greene, Er 3:75 based on Greggia (cruciferae).
PABTHYLOSIS K 5:101.
P. MARTIUM K 5:101. Cur 1:140 as Venegasia carpesioides DC.

Genus **PASTINACA** Linnaeus.

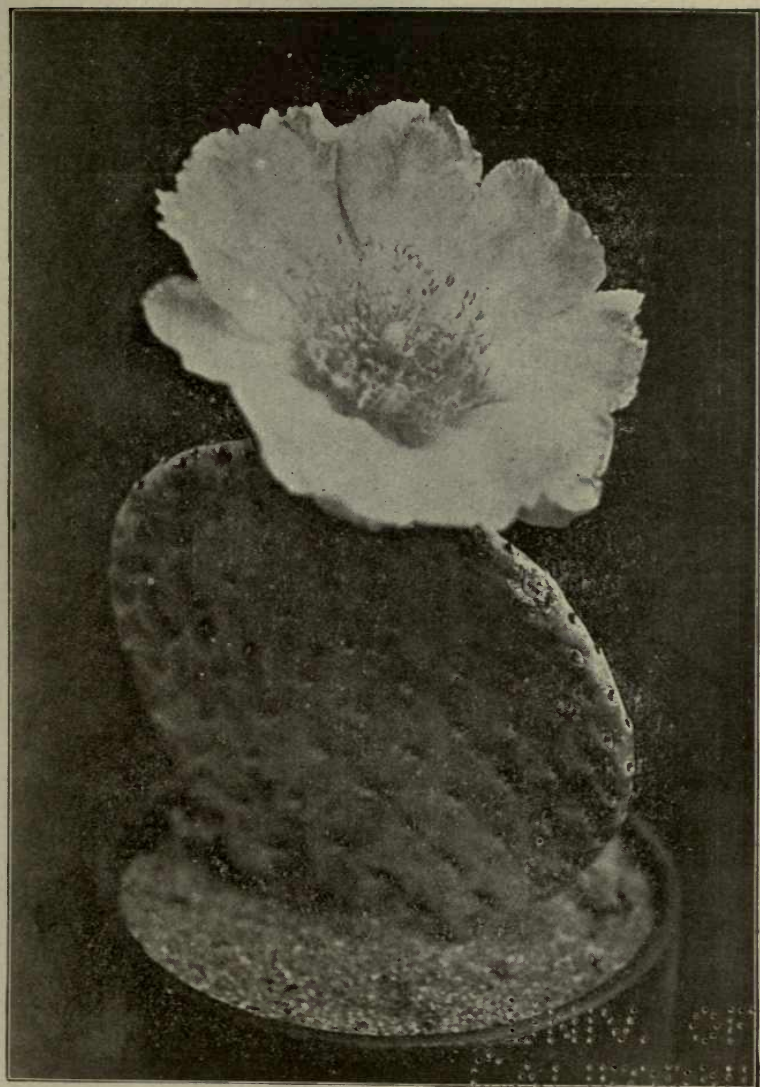
A 1:274 d. = Peucedanum fide IK.
 L. sp pl 262. Da 7. Z 1:10. Ab 291. A 1:274 d. — P: S fide IK.
PASTINACA SATIVA Linn.
 Parish, Zoe 1:10.
 Davidson, Erythea 1:59. LA Co. Pl LA Co 7.
 C & R. Rev Umb 49.
 Parsnip, naturalized at Sber (Parish).
PAULOWNIA Sieb & Zucc, Fl Jap 1:25 t 10.
P. FORTUNEI Z 1:95.
P. IMPERIALIS S & Z, lc. Japan.

Genus **PECTIS** Linnaeus.

L. syst ed 10, 1221 (1759).
P. COULTERI Harv & G, Am ac mem ns, 4:62. Ar. B 1:399.
P. FILIPES Harv & G, lc. B 1:400. = taliscana fide IK.
P. IMBERBIS G, Pl Wright 2:70. Ar. B 1:399.
P. MULTISETA Bth, bot Sulph 20. B 1:399.
PECTIS PAPPOSA A. Gray.
 Pl Fendl 62. Ut, Baja. B 1:399, 617, 2:458. Parish, Z 5:120 CD (not SD).
 Utah: S D Col Baja; N. M.
P. PROSTRATA Cav lc 4:12 t 324. Mex.
P. PUNCTATA Jacq, Stirp Am t 128. B 1:399. Parish, Z 5:120 Baja (not Cal).

Genus **PECTOCARYA** De Candolle.

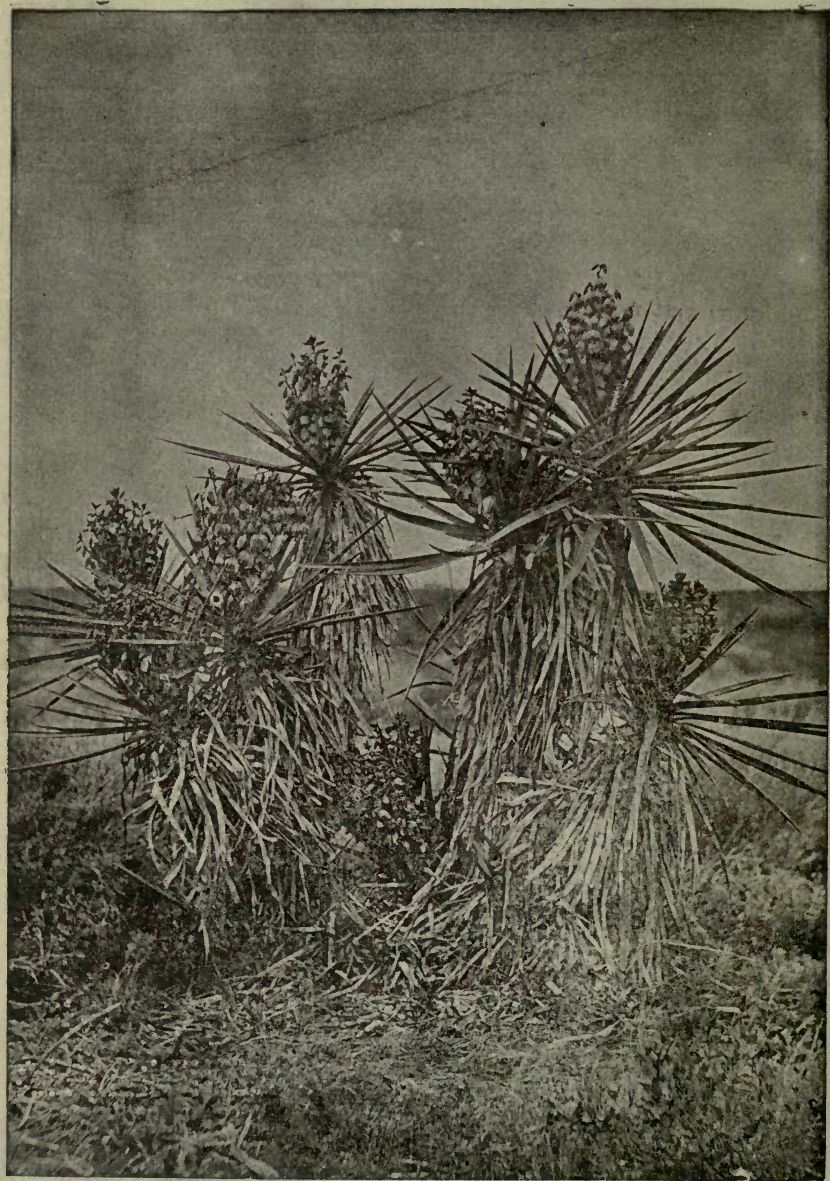
A 1:204 d.
P. CHILENSIS DC 10:120 = linearis, fide IK.
 Variety **CALIFORNICA** T. Pac Ry R 4:424. B 1:531 as lateriflora.
P. LATERIFLORA DC 10:120. B 1:531.
PECTOCARYA LINEARIS D. C.
 DC, Prodr 10:120 (1846).
 Type locality: "in Sancti Jacobi Chilensis Campis aridis."
 Coville, CNH 4:163. Nev. Panamint mts.
 Cynoglossum linearis Ruiz & Pav, Fl



OPUNTIA BASILARIS

NO. 1000
ANNEX 10

UNIVERSITY OF
CAMBRIDGE



YUCCA BACCATA

Peruv 2:6 (1799).

Z 1:209. Da 12. Ab 330. B 1:531, 2:469.
A 1:204 d.

PECTOCARYA PENICILLATA DC.

Abrams, Fl LA 330. Common in all our valleys and foothills, mostly in dry ground.

A DC Prodr 10:120 (1846).

Coville, CNH 4:163.

Cynoglossum penicillatum H. & A., Bot Beech 371 (1840-1).

Type locality: Californian.

Greene, Cal ac b 2:407 Cruz. B 1:531, 2:469. A 1:204 d.

P. FUSILLA G 12:81. Cal. Chilli. B 2:470. Z 1:209.

PECTOCARYA SETOSA A. Gray.

G 12:81. Cal. B 2:470. Ab 330. A 1:204 d.

Type locality: "S. E. Cal. on the desert plains of the Upper Mohave River." Coville, CNH 4:163.

Genus PEDICULARIS Tournefort.

A 1:228 d.

P. ATTENUATA Bth in DC 10:574. B 1:583 as densiflora.

P. ATTOLERS G 7:384. Par 260. B 1:582. M 1:4 S.

P. CENTRANTHERA G, Mex bound r 120. B 1:583.

P. DENSIFLORA Bth, DC 10:574. B 1:583. Ab 372. Par 342 t. A 1:228 d. M 3:

51. Indian warrior. Lousewort.

P. GROENLANDICA Retz. Par 258. B 1:582.

P. INCARNATA Baumg. Eu Stirp Trans 2:203. (Retz, Obs 4:27 t 1 = Groenlandica fide, B 1:582.)

P. RACEMOSA Dougl. Hook Fl 2:108. B 1:582.

P. SEMIBARBATA G 7:385. Ha 118. B 1:583, 2:476. A 1:228 d.

Coville, CNH 4:173. Sierra Nevada.

Abrams, Fl LA 373.—"Frequent on dry ridges in the open pine forests of all our mts. My-JL."

P. SURRECTA Bth, Hook Fl 2:107. B 1:582. = groenlandica fide Lx.

PELECYPHORA Ehrenberg, in Bot. Zeit. 1:737 (1843). Stems small, club-shaped; tubercles in spiral rows, flattened on the top, with 2 rows of short scale-like spines.

P. aselliformis Ehrenberg, Bot. Zeit. 1:737 1843. Lemaire, in Illustration Horticole vi. t. 186. Lemaire described the flower as having the outer series of petals pale, almost white. Our plants have bloomed in May, the flower scarce half an inch in length and diameter, open only in sunlight, with 13 bright magenta-colored petals and 7 or 8 pale lavender sepals; 4 stigmata white, style and filaments tinged with purple, anthers bright orange. In earlier days they were literally worth their weight in gold. Hatchet-cactus, so-called from the shape of the tubercles. Mexico. Variety concolor was published by Dr.

Hooker, based on seedlings raised and flowered by Justus Corderoy, with flowers uniformly rosy purple, and was 6061, in 1873. Rebut listed a cristate form as variety cristata. Schuman's variety pectinata is worthy of specific rank. (10)

PELITHELLUM

P. PELTATUM Par 248. M 3:78.

PENTACAENA Bartling. A 1:163 d.

P. RAMOSISSIMA H & A, Hook, bot misc 3:388. Da 3. Greene, Cal ac b 2:392 Cruz. Br 1:208 Rosa. B 1:72. Ab 150. A 1:163 d. = polycnemoides fide IK.

P. POLYCNEMOIDES Barth., in Presl, Rel Haenk 2:5 t 49 f 1.

Genus PELLAEA Link.

PELLAEA ANDROMEDAEOFILIA Fee.

Arizona; southern and Baja California.

PELLAEA ORNITHOPUS Hook.

California; Baja Cal. Tea or wire fern

PELLAEA WRIGHTIANA Hook.

Genus PENTACHAETA Nuttall.

P. APHANTOCHEETA Greene, bot gaz 8:255. = exilis fide IK.

PENTACHAETA AUREA Nutt.

Nutt, Phil ac tr, ns. 7:336 (1841). (G. Pac Ry R 4:99. = bellidiflora fide IK.) B 1:305 S. Par 130 t. A 1:56, 246 d.

Abrams, Fl LA 394.—Arroyo Seco (Davidson). Frequent in the Santa Ana mts.

Baja! SBer Co (Parish).

P. BELLIDIFLORA Greene, Cal ac b 1:86. Cal.

P. EXILIS G 8:623. B 1:305.

P. GRACILIS Bth, Hook Ic t 1101. B 1:305 as an Oxypappus.

PENTACHAETA LYONI A. Gray.

Syn fl 1 (2):445. Ab 335. A 1:56 fdr. Da 8. Ab 335.

PENTACHAETA ORCUTII A. Gray.

A 1:56 fdr.

PENTACHAETA PALEACEA Greene.

A 1:56 fdr.

Genus PENTSTEMON Mitchell.

A 1:226 d.

P. ACUMINATUS Dougl. bot reg t 1235. B 1:559.

PENTSTEMON AMBIGUUS Torr.

CD (Parish); Colo; N M; Mexico.

T. Ann NY Lyc 2:228. B 1:559. A 1:228.

PENTSTEMON ANTIRRHINOIDES Bh.

San Bernardino Co; S D Co; Baja.

DC 10:594 (1846). B 1:557. A 1:228. Cov 169.

P. ARENARIUS P 1:282. Nev.

PENTSTEMON AZUREUS Bth.

Bth 327. Da 13. Jepson, Er 1:12. Par 316 t. B 1:561, 2:473.

Variety **ANGUSTISSIMUS** G. M 4:67.

Variety **PAUVULUS** G, Syn Fl 2 (1):272. Cov 169. Sierra Nevada.

PENTSTEMON BARBATUS Nutt.

Colo; New Mexico; Mexico.

B 1:622. A 1:228.

Variety **LABROSUS** A. Gray.

Kern Co (Rothrock); Baja mts!

Da 13. A 1:227, as sp; 228.

P. BREVIFLORUS Lindl. bot reg t 1946.

B 1:557. M 4:66.

T. BAKERI P 4:318.

- P. GENICULATUS** P 3:310.
P. PULCHELLUS P 3:310.
P. BREVILAEIS G 17:229. Cur 1:44 as *Cerosensis* K.
P. BRIDGESII G, 7:379. Cov 169. Par 364. B 1:560. Ha 119. Yosemite. M 4:67.
P. CANOSU-BARBATUM K 2:15. Cur 1:145 as *breviflorus*. B 1:562. K, Hutchinson's mag, S 1860, f.
P. CARINATUS K 1:62. Cur 1:145 as *breviflorus*.
P. CEDROSENSIS K 2:19. P 1:206 Cedros. A 1:228.
PENTSTEMON CAESIUS A. Gray.
PENTSTEMON CENTRANTHIFOLIUS Hort soc Lond tr, sr 2, 1:481 (1835). Bentham, Scroph Ind 7 (1835). Hall, U 119. Scarlet Bugler. Type locality: Californian. Coville, CNH 4:169. Sber mts. Monterey to Baja! Arizona. Par 364 t. B 1:560. Da 13. Ab 360. A 1:226 d. Cov 169.
PENTSTEMON CERROSENSIS Kelg. Cedros Island (Pond). K 2:19. Hesperian Ja 1860, f. Cur 1:144 as *brevilabris*. Chelone *centranthifolius* Bth. B 1:559.
PENTSTEMON CLEVELANDI A. Gray. Gray, Am ac pr 11:94.—Syn Fl II, 1:265, near *Sber* (probably *CD fide* Parish, Zoe 5:118). Sber Co; Baja mts. Fls bright solitary, 1-3 ft h, lvs dark g; handsome in cultivation. 2:473. A 1:226 d.
P. CONFERTUS Dougl, bot reg t 1260. B 1:560. Variety **PROCEUS** Cov 169, based on *procerus* Graham, Edinb new Phil SC J 7:348.
PENTSTEMON CORDIFOLIUS Benth. Santa Barbara; Baja; Cruz; Rosa. DC 10:329. B 1:557. Ab 360. Da 13. Par 356 t. A 1:226 d. Greene, Cal ac b 2:409, Cruz, "with woody sts 1' thick, oft climbing 20° among the branches of trees." **P. CORYMBOSUM** Bth, DC 10:593. Jepson, Er 1:16. B 1:557.
P. DAVIDSONII P 2:241. Cov 170.
P. DEUSTUS Dougl, bot reg t 1318. B 1:558. Parry, Wyo 13.
P. DIFFUSUS Dougl, bot reg t 1132. B 1:562.
P. EASTWOODIAE M 1:4.
PENTSTEMON EATONI A. Gray. San Bernardino mts (Parish 113). G 8:395. B 1:560. 2:473. A 1:228. Ha 119. P. **ERIANATHERA** Nutt, Fras Cat-1813. B 1:558 as *glaber*. P. **FENDLERI** G, Pac Ry R 2:168 t 5. B 1:559 as *acuminatus*. P. **FEEMONET** T & G, Am ac pr 6:60. (G, B 1:622; 2:473, as *heterodoxus*.) **P. FRUTICOSUS** Cov 170.
PENTSTEMON GLABER Pursh. Southern California (Parish 1848). Fl 2:738. Cov 170. B 1:558. A 1:228. M 4:66. Variety **UTAFENSIS** Wat, bot king 217. Parish, Er 3:61. Sber mts. P. **GAIEDNERI** Hook Fl 2:99. B 1:559. P. **GLANDULOSUS** Dougl, bot reg t P. **GLAUCIFOLIUS** G, Pac Ry R 6:82. 1262. B 1:562. B1:561 as *azureus* var: *Jaffrayanus*. P. **GORDONI** Hook, bot mag t 4319. B 1:558 as *glaber*. **P. GRACILENTUS** G, Pac R 6:82. B 1:561. P. **HETERANDER** T & G, Pac Ry R 2:123 t 8. B 1:559 as *deustus*. **P. HETERODOXUS** G, syn fl 2 (1) 269. B 2:473. **PENTSTEMON HETEROPHYLLUS** Lm. Lindl, bot reg t 1899. Ab 361. Da 13. Par 314. A 1:226 d. B 1:561. M 3:62. Variety **LATIPOLIUS** Wat, bot king 222. B 1:561 as *azureus* var: *Jaffrayanus*. **P. HUMILIS** Nutt ex G 6:69. Parry, Wyo 5. **P. INTONSUS** M 1:44. P. *Jaffrayanus* Hook, bot mag t 5045. B 1:561 as *azureus* var: J. **P. KINGII** Wat, bot king 222. Variety **GLAUCA** K 5:39. Cur 1:144 as *glaber*. **PENTSTEMON LABROSUS** Hook, f. Hooker, f. Bot Mag ex t 6738 (1884). Ab 360. A 1:227 d. Hall U 119. Rabbit ears. Coville, CNH 4:170. Frazier mt. Abrams, Fl LA 360. Gabriel, Sber mts. P. *barbatus* var. *labrosus* Gray, Bot Cal 1:622 (1876). **PENTSTEMON LAETUS** A. Gray. Bost sc nat hist J 7:147. B 1:561. Parish, Z 5:118. Da 13. Cov 170. Type locality: near "Fort Tejon," Cal. **P. LAEICIFOLIUS** H & A, bot Beech 376. B 1:559. **P. LEMMONI** G, B 1:557. Er 1:16. **PENTSTEMON LEUCANTHUS** Greene. P 1:72. A 1:16 fdr. **P. LOBEII** Lem III Hort 1862 t 315. B 1:557 as *antirrhinoides*. **P. MENZIESII** Hook, Fl 2:98. B 1:556. 2:477. Par 254. Parry, Wyo 13. **P. NEWBERYI** G, Pac Ry R 6:82 t 14. B 1:556 as *Menziesii*. **P. MITIDUS** Dougl, DC 10:323. B 1:559 as *acuminatus*. **P. OVATUS** Dougl, bot mag t 2903. B 1:559. **PENTSTEMON PALMERI** A. Gray. Gray, Am ac pr 7:379 (1868). Type localities: Ar, "in Skull valley, and on Rio Verde near Fort Whipple." Abrams, Fl LA 361. About 5000 ft. Gabriel and Sber mts. Coville, CNH 4:170. Coso mts. Nev. Utah; Nevada; Arizona; Cantilles! Quintin! Ar. B 1:558. 2:473. Da 13. A 1:227 d. Hall 119. M 4:66. **PENTSTEMON PARISHII** A. Gray. Hall U 119, suggests that this is a hybrid of *P. centranthifolius* s spectabilis. Abrams, Fl LA 361. Cucamonga; Sber. San Bernardino and S D Co (Parish 355). G 17:228. A 1:227 d. **PENTSTEMON PARRYI** A. Gray. CD (Parish 356); Utah; Nevada; Arizona. G. Syn Fl 2 (1): 264. A 1:228. **P. PROCEUS** Dougl, bot mag t 2954. B 1:560 as *confertus*. Variety **INCANUS** G. Ut, Nev. Baja mts! **P. PUNICEUS** G, Mex bound 113. B 1:

560. Ar.
P. RATTANI G 15:50. B 2:473.
 Variety **MINOE** G 15:50.
P. RICHARDSONII Dougl, bot reg t 1121. B 1:562.
P. ROEZLI Regel, Gartenfl 1872:239. B 1:561.
P. ROSTRIFLORUM K 2:15. Cur 1:145 as Bridgesii. K. Hutchin's mag, S 1860, f.
PENTSTEMON PUMILUS Nutt.
PENTSTEMON ROTHROCKII Gray.
 S D mts; Little Olanche mt. (Rothrock).
 Ha 120. B 2:473. A 1:228.
P. SPECIOSUS Dougl, bot reg t 1270. B 1:558 as glaber.
PENTSTEMON SPECTABILIS Thurber.
 LA Co—Las Huevitas, Baja (Br); N M. Pac Ry R 4:119. B 1:558. Ab 361. Da 13. A 1:227 d. Ha 120.
P. TENELLUS K 1:56. Cur 1:144 as azureus.
PENTSTEMON TERNATUS Torr.
 Kern Co; San Diego Co! Baja!
 G, bot Mex B 115. Da 13. B 1:557. Ab 360. A 1:228. Cov 170. Ha 120.
P. TORREYI Hort ex Regel. Tex. M 4:78 Ar.
P. TRIPEHYLLUS Dougl, bot reg t 1245. B 1:562.
P. UTARENSIS M 1:4 S.
P. VENUSTUS Dougl, bot reg t 1309. B 1:562.
PERAPHYLLUM Nutt, T & G, Fl 1:474 (1840).
P. RAMOSISSIMUM Nutt, lc. B 2:445. Br, Colo 228, 236.
Genus PEREZIA Lagasca.
 Amer Nat 1:31 (1811). A 1:197 d.
P. ARIZONICA G, B 2:422. = Wrightii fide IK.
PEREZIA MICROCEPHALA A Gray.
 Abrams, Fl LA 443.—Frequent on the dry interior plains and foothills. JI-Ag. Bloch, Erythea 1:191. Sacapellote. Notes its medicinal repute. Monterey to SD
 SBar to Santo Tomas, Baja!
 Pl Wright 1:127. Da 10. B 2:422. Br 1:213 Rosa. Greene, Cal ac b 2:405 Cruz. A 1:197 d.
PERITOMA DC 1:237 (1824). = Cleome fide IK.
P. AUBEUM Nutt, Phil ac J 7:15. P 4:210. =C: lutea fide IK.
P. INORNATUM P 4:210.
P. LUTEUM Raf, Sylva Tel 112. P 4:210. =C: l fide IK.
P. SERRULATUM DC 1:237. P 4:210. =C: integrifolia fide IK.
Genus PERITYLE Benth.
 Mostly ann, with dentate or palmately lobed lvs, all but the lower alt. and sm or middle-sized hds terminating the branches: inv hemispheric, its bracts distinct, more or less overlapping, capriate-concave and partly embracing the outer ak: receptacle flat or concave: ray-fls y or w, pist or 0: disk fls y, nar, 4-toothed: ak flat, cartilaginous-margined, com strongly ciliate: pap a squamellate or cupulate crown and com a slender awn from one or both of angles.
P. ACMELLA Harv & G, Am ac mem ns, 4:77. B 1:396. 2:458. =microglossa fide IK.
P. AGLOSSA G, Pl Wright 2:107. B 1:

397. =Laphamia a fide IK.
PERITYLE CALIFORNICA Benth.
 Magdalena bay, Baja (Hinds).
 Bth, bot Sulph 23 t 15. B 1:396.
 Variety **NUDA** A. Gray.
 Ab 427.
 Somewhat pubescent and viscid-glandular: lvs roundish-cordate, about 1 cm broad, incisely lobed, lobes coarsely dentate; hds narrowly oblong; ak oblong, densely hispid-villous on the margins; pappus 0.
 CD (Schott, Or); San Clemente Island (Nevin & Lyon).
P. CORONOPIFOLIA G, Pl Wright 2:82. B 1:397.
P. CUNEATA Br, Z 1:54.
PERITYLE EMORYI Torr.
 Emory rec 142, Br, Z 1:114, "1-2° hi, ak entirely awnless in the cat spec." Da 10. B 1:397.
 Variety **NUDA** G, B 1:397.
 Variety **ORCUTTII** Rose, bot gaz 15:117. Cantilles; Santa Maria, Baja (Br).
P. FITCHII T, Pac Ry R 4:100. P 1:291. San Bartolome bay; 265 San Benito Isl; 205 Cedros. Greene. Cal as b 2:403 Cruz.
PERITYLE GRAYI Rose.
 Guadalupe; Cedros (Palmer).
 G 11:78. B 1:396.
PERITYLE GREENEI Rose.
 Cruz; Cedros; San Benito Isl (Pond).
PERITYLE INCANA A. Gray.
 Guadalupe Island (Palmer).
P. LEPTOGLOSSA Harv & G. B 1:397.
PERITYLE MICROGLOSSA Benth.
 La Paz, Baja (Palmer).
 Bth, bot Sulph 119. B 1:358.
P. NUDA T, Pac Ry R 4:100. B 1:397 as Emoryi var: n.
P. PABEYI G, Pl Wright 2:106. B 1:397. =Laphamia P fide IK.
P. PLUMICERA Harv & G. Ar. B 1:396.
Genus PETALONYX A. Gray.
 Cx-tube very sm, cylindrical, with 5 linear decid lobes as long as ova: pet 5, with lg connivent claws and ovate-spatulate blade: sta 5, with free filiform fil, inserted with pet on outer edge of an epizynous disk; anth sm, didymous: ova 1-celled: sty simple, elongated: stig entire: ovule solitary, pendulous from the summit of the cell: cap very sm, oblig, bursting irr: deb oblig, smooth. Erect per herbs, or shrubby at base, pubescent or rough with sh barbed hairs; lvs alt, entire or toothed; fls sm, y, in terminal hds or sh lfy spikes.
PETALONYX LINEARIS Greene.
 Cedros (Greene); Santo Tomas, Baja (Or).
 Cal ac b 1:188. P 1:203.
P. NITIDUS Wat, Am nat 7:300. Ut, B 1:238.
P. PABEYI G 10:72. =nitidus fide IK. B 1:238.
PETALONYX THURBERII A. Gray.
 CD; Calamujet, Baja (Br); Arizona; Nevada.
 Pl Thurb 319. T, bot Mex B t 22.
 Type locality: "valley of the Rio Gila."
 Sts 1-2 ft hi from a somewhat woody base, branching: lvs ovate to oblig, 1' lg or less, sm and becoming bract-like (2-3" lg) on the branches, sessile, acute,

entire or rarely few-toothed; floral bracts ovate, acuminate, toothed at base; fls in sh dense spikes, sessile; ex 2" lg; pet light y, 2" lg or more, slightly hispid; fil and sty $\frac{1}{2}$ " lg; cap 1" lg, not angled or winged.

PETALOSTEMON Michx Fl 2:48 t 37 (1803).

P. PULCHERRIMUM Heller, Torr cl b 26:593. M 1:28 as pubescens.

P. PUBESCENS M 1:28.

P. VIRGATUM Scheele, Linn 21:401. M 1:28 as pubescens.

P. VIOLACEUS Michx Fl 2:50 t 37 f 2. Variety **PUBESCENS** G, Pl Wright 1:46. M 1:28 as sp.

FETASTES L, syst ed 1 (1735).

P. NIVALIS P 2:18.

P. PALMATA G, B 1:407. P 2:19. M 3:78.

P. SAGITTATUS G, B 1:407.

PETROMECON P 5:293.

P. FRUTESCENS P 5:294.

P. PALMERI P 5:293.

Genus **PETUNIA** Juss.

Viscid-pubescent ann or per branching herbs, with entire lvs and axyl or terminal solitary fls; ex deeply 5-cleft or 5-parted, seg nar; cor funnelform or salver-shaped, its limb plicate spreading, slightly irr; sta 5, inserted on cor-throat, 4 didynamous, perfect, the fifth smaller, obsolete; fl slender; ova 2-celled; sty filiform; stlg 2-lamellate; cap 2-celled, 2-valved.

PETUNIA PARVIFLORA Juss.

Spreading or prostrate on the sea shore or moist saline sands.

Ann Mus Par 2:216 t 47. Da 12. Ab 355. B 1:546. Z 1:302.

Sm, prostrate or diffusely spreading, pubescent ann; lvs narrow-spatulate, $\frac{1}{2}$ l long, almost sessile; ped short, exlobes resembling lvs; cor p, tube pale or yish, its lobes sh, retuse, slightly unequal; cap sm, ovoid. Monterey, Cal. SA, Tex, Fla, Baja! Salpiglossis prostrata H & A, Bot Beechy 123, 376.

Genus **PEUCEDANUM** Linnaeus.

Syst ed 1 (1735). A 1:271 d.

Lomatium Rafinesque.

P. AMBIGUUM Nutt, T & G Fl 1:626. B 1:269.

P. CALIFORNICUM C & R. W 5:19. Cal. Fl 1:628. Br 1:203 Cruz, 211 Rosa. A 1:272 d. Da 7. B 1:269.

PEUCEDANUM CARUIFOLIUM T & G.

PEUCEDANUM DASYCARPUM T. & G. Fl 1:628. B 1:270, 2:452. Da 7. A 1:272 d.

Lomatium dasyacarpum C & R.

Abrams, Fl LA 290.

Peucedanum Pringlei C & R, Bot gaz 13:209.

SD to Lake Co.; NM (Greene).

P. DONNELLII C & R. W 5:19.

PEUCEDANUM EURYPTERA A. Gray.

See *Euryptera lucida* Nutt.

G 7:348. A 1:304 S.

Da 7. B 1:269.

PEUCEDANUM GRAVEOLENS B & H. Gen 1:919. A 1:273.

Davidson, *Erythraea* 1:59. LA Co.

P. FARINOSUM Geyer. B 1:269, 2:451.

P. POENICULACEUM Nutt, T & G Fl 1:627. B 1:270.

P. HALLII Wat 11:141. B 1:269, 2:452. **PEUCEDANUM HASSEI** C. & R. Da 7. A 1:274 d. Er 1:10.

Jepson, *Erythraea* 1:10 Vaca mts, "lfts smaller and thicker").

P. LAEVIGATUM Nutt, T & G Fl 1:627. B 1:269 as *ambiguum*.

P. LATIFOLIUM Nutt, T & G Fl 1:625. B 1:268 as *Nuttallii*.

P. LEIOCARPUM Nutt, T & G Fl 1:626. B 1:268. Er 1:9. Parry, Wyo 18.

P. LEPTOCARPUM Nutt, T & G Fl 1:626. B 1:269 as *triternatum*.

P. MACROCARPUM Nutt, T & G Fl 1:627. B 1:270.

P. MARGINATUM Bth 312. B 1:269.

P. MARTINDALEI C & R. W 5:19.

Variety **ANGUSTATUM** W 5:19.

P. MILLEFOLIUM Sond, in Harv & Sond, Fl Cap 2:559, Africa.

Wat, bot king 129; B 1:270, Cal. **PEUCEDANUM MOHAVENSIS** C. & R.

A 1:273. C & R, Rev Umb 62 (1888).

Mohave (Curran).

Lomatium Mohavense C & R Mon 234 (1900).

PEUCEDANUM NEVADENSE S. Wat-son, Am ac pr 11:143.

Brewer & Watson, Bot Cal 1:270. **Peucedanum nudicaule** Watson, bot King Exp 130, etc, not Nuttall.

PEUCEDANUM NEWBERYI Watson. Am nat 7:301. A 1:273 fdr. = *Ferula* N, fide IK.

P. NUDICAULE Wat, Index 429. B 1:270. S. A 1:273 S. = *macrocarpum* fide IK.

P. NUTTALLII Wat, bot king 128. B 1:268.

P. PARVIFOLIUM T & G Fl 1:628. B 1:269.

P. ROBUSTUM Jepson.

"Acaulescent, glab, 2 ft hi, with 1-3

ped; lvs ternate, then pinnate lfts broadly ovate or oblg, sessile, sparingly serrate or toothed above; peds and rays

dilated at summit; rays 15-21, unequal, $\frac{1}{4}$ -8" lg, pedicels sub-equal, 2" lg; fr

2 $\frac{1}{2}$ -3" wide, 4 $\frac{1}{2}$ -5" lg, the wing $\frac{1}{2}$ as broad as the body; oil-tubes broad, solitary in the intervals, 6 on the commissural face, the lateral in pairs; no inv

nor involucels. Plains of the Sacramento, east of Cannon's station; in fl

and in immature fr 14 My, and in mature fr 18 Je 1892."—Jepson, Er 1:9.

P. PRINGLEI A 1:272 S.

P. SIMPLEX Nutt, Wat bot king 129. B 1:269.

P. TOMENTOSUM Bth 312. B 1:270 as *dasyacarpum*.

P. TRITERNATUM Nutt, T & G Fl 1:626. B 1:268.

PEUCEDANUM UTRICULATUM Nutt.

Nuttall, in T & G, Fl 1:628.

Jepson, Fl W Mid Cal 359.

Da 7. S Ber (Parish 984); British Columbia; Idaho.

Lomatium utriculatum C & R.

Abrams, Fl LA 289.—"Frequent on the mesas and gravelly foothills."

B 1:269. A 1:272 d.

PEUCEDANUM VASEYI C. & R.

C. & R. Bot gaz 13:144. S Ber mesas and mts (G. R. Vasey; Parish).

A 1:272 d.

- P. CIRCINATIFORMIS** G 10:325. B 1: 511.
- P. COOPERAE** G 15:49. B 2:467. A 1: 170.
- P. COMMIXTA** P 5:21.
- P. CONGDONII** P 5:22.
- P. CORDIFOLIA** Wat. A 1:170.
- P. CRASSIFOLIA** T, Wat, bot king 255. B 1:512.
- P. CRENULATA** T, Wat bot king 251. B 1:507.
- P. CRYPTANTHA** P 5:21.
- P. CURVIFES** T, Wat bot king 252. B 1:511. Cov 158. A 1:170. (Parry, Am nat 9:16 —cephalotes fide IK.)
- P. DAVIDSONI** G 10:324. B 1:510, 2:467. A 1:12, 170.
- Variety **MACRANTHA** Parish. Ab 325. A 1:170 fdr.
- P. DECUMBENS** P 5:17.
- P. DISTANS** G. Br 1:204 Cruz, 214 Rosa; cites scabrella Greene as a synonym. Ab 323. A 1:170d. Da 11.
- P. DIVARICATA** G 10:325. M 3:71. B 1:511.
- P. DOUGLASHII** T, Mex bound 143. Par 288. A 1:171 d. B 1:510. Ab 325. Da 12.
- P. EREMOPHILA** P 5:20.
- P. FASTIGIATA** P 5:18.
- P. FLORIBUNDA** Greene, Cal ac b 1: 200, 226. Guad. Z 1:142.
- P. FRANKLINII** G, Man ed 2, 329. B 1:509.
- P. FREMONTII** T, Ives R 21. B 1:512, 2:467. Ab 326. A 1:171 d.
- P. FRIGIDA** P 4:39.
- P. GLANDULOSA** K 7:92. Cur 1:143, "probably Parryi." B 2:467 as Parryi or viscidula.
- P. GRANDIFLOBA** G 10:321. B 1:518. Ab 324. Da 12. Par 273. Br Z 1:114 Cat. A 1:171.
- P. GRISEA** G 12:80. B 2:467.
- P. GYMNOCLADA** T, Wat bot king 255. B 1:512. A 1:170.
- P. HETEROPHYLLA** Pursh Fl 1:140. B 1:506 as circinata.
- P. HETEROSEPALA** P 5:21.
- P. HETEROSPERMA** Parish. A 1:68 fdr.
- P. HIETUOSA** G. Baja (Or 1342).
- P. HISPIDA** G, syn Fl 2 (1):161. B 2: 467. Ab 322. Da 11. A 1:171d. Greene, Cal ac b 2:407 Cruz.
- Variety **BRACHYANTHA** Cov 158. P 5: 21 S.
- P. HUMILIS** T, Pac Ry R 2:122 t 7. B 1:507. M 4:67.
- P. HYDROPHYLLOIDES**, Tex G 7:400. B 1:509.
- PHACELIA IVESIANA** Torr.
- T. bot Ives exp 21. Cov 159. B 1:512, 2:467.
- Utah; Nevada; Arizona; Mohave!
- PHACELIA IXODES** Kellogg.
- Cal ac b 1:6. P 1:206 (P. plumosa K.) Cedros; Santos!
- P. LEPTOSTACHYA** A 1:12.
- P. LOASAEFOLIA** T, Mex bound 144. B 1:509.
- PHACELIA LEUCANTHA** Lemmon.
- P 1:175. Del Mar. SD Co.
- PHACELIA LONGIPES** Torrey.
- G. 10:322. B 1:513. Da 12. Ab 324.
- Slender, loosely branching cauline lvs roundish-oval or subcordate, coarsely and obtusely 5-8-toothed, about 12 mm lg, all sh'er than petioles; cor about 1
- PEUCEDANUM VILLOSUM** Nutt.
- Nuttall, MS, in Watson, bot King Exp 131 (1871).
- B 1:270. A 1:273d.
- Davidson, Pl LA 7.
- Type locality: "on the plains of the Plate."
- Watson, bot King Exp 131.
- Brewer & Watson, Bot Cal 270.
- PEUCEPHALUM** G, bot Mex bound 74 (1858).
- PEUCEPHYLLUM SCHOTTII** A. Gray.
- CD; Calamjuet, Baja (Br); Arizona.
- G, ls. B 1:410 as Psathyrotes S.
- PHACA** L, Coroll Gen 13 (1737).
- P. ANNUA** Geyer. B 1:146 as Astragalus Geyerl.
- P. ASTRAGALINA** var. H & A. bot Beech 334. B 1:146 as Astragalus tener.
- P. CAESCENS** Nutt. B 1:149 as Astragalus leucopsis.
- P. Crotalariae** Bth, Pl Hartw? B 1:149 as Astragalus C.
- P. DENSIFOLIA** B 1:149 as Astragalus Crotalariae.
- P. DOUGLASHII** T & G Fl 1:346. B 1: 150 as Astragalus D.
- P. HOOKERIANA** T & G. B 1:148 as Astragalus H.
- P. LEUCOPHYLLA** H & A. B 1:148 as Astragalus leucophyllus.
- P. MACRADON** H & A. B 1:150 as Astragalus m.
- P. MEGACARPA** Nutt. B 1:148 as Astragalus m.
- P. MOLLISSIMA** Nutt. B 7:151 as Astragalus Purshii.
- P. NUTTALLII** T & G Fl. B 1:150 as Astragalus Menziesii.
- P. TEICHOPODA** Nutt. B 1:149 as Astragalus t.
- P. CANDIDISSIMA** Bth, bot Sulph. P 2:24 as "very likely Astragalus anemophilus."
- P. FASTIDIA** K, Hesperian Je 1860 f. Cur. 1:136 "apparently Astragalus Coulteri. Cedros?"
- P. VESTITA** Bth, bot Sulph 13. P 1:33 as Astragalus anemophilus.
- PHACELIA** Juss. A 1:169 d.
- PHACELIA AFFINIS** A. Gray.
- Syn Fl 2 (1):417. Parish, Er 3:61, "southwestern part of CD (C. R. Orcutt)", should be Baja mts! A 1:79 d.
- P. ALDERSONII** P 5:22. A 1:11 fdr.
- P. ARTHURI** P 1:224. Oakland, Cal.
- P. BICOLOR** T, Wat bot king 255. B 1:511. 2:467.
- P. BOLANDERI** G 10:322. B 1:509.
- P. BIFURCA** P 5:18.
- P. BIOLETTII** P 5:23.
- P. BRACHYANTHA** Bth, L Sc tr 17: 279. B 1:507. Chill.
- P. BRACHYLOBA** G 10:324. B 1:510, 2: 467. Da 12. Ab 325.
- P. BRANNANI** K 7:90. Cur 1:142 as Fremontii.
- P. BREWERI** G 10:317. B 1:507.
- P. CALIFORNICA** Cham, in Linnaea 4:495. B 1:506 as circinata. A 1:172 S.
- P. CAMPANULARIA** G, Syn Fl 2 (1): 164. B 2:467. A 1:170.
- P. CIGUTARIA** P 5:20.
- P. CILIATA** Bth, L sc tr 17:280. B 1:508. A 1:170 d. Da 12. Ab 323.
- P. CIRCINATA** Jacq, f. Eclog Am 1: 135 t 91. B 1:506. Da 11. Br. Z 4:208. Parish, Z 5:9. A 1:170 S, 172 S.

cm lg, nearly w, 5-cleft barely to mid-
dle; ovules on each placenta 8-10; sds
fewer.

Not rare in canyons, LA and SBER Co.
P. MAGELLANICA Cov. Ab 322. A 1:
170, 171 d.

PHACELIA LYONI A. Gray.

G 20:303. A 1:67 d.

P. MALVAEFOLIA G Don, Gen Syst 4:
396. B 1:507.

P. MENZIESII T, Wat bot king 252. B
1:510. Mohave.

PHACELIA MICRANTHA Torr.

CD (Parish 776); Baja; Utah Texas.

Mex bound 144. B 1:511, 505 S.

PHACELIA MOHAVENSIS A. Gray.

Mohave (Parish 1834).

Syn Fl 2 (1):164. B 2:467.

P. NAMATOIDES G 10:317. B 1:506.
M 1:58 as

PHACELIA NEMOPHILOIDES Greene.
P 5:23. A 1:12 fdr.

P. NEMORALIS P 1:141. Oakland, Cal.

PHACELIA ORCUTTIANA A. Gray.

A 1:67 d (P. laucantha Lemmon).

P. PALMERI Vasey & Rose. Quintin.

PHACELIA PARISHII A. Gray.

G 19:88. A 1:68d.

PHACELIA PARRYI Torr.

SD! Cruz; Quintin! Da 12.

T, bot Mex B 146. Par 294. Greene, Cal
ac b 2:407 Cruz. B 1:513. Ab 324.

"Mts east of SD, Jl; Parry. St 1-2° hi,
apparently erect. Lvs 1-1½" lg, taper-
ing at the base to a petiole which is 6
or 8" lg. Racemes at first circinate,
when in fr nearly a ft lg. Pedicels about
1' in length, spreading horizontally. Seg
of ex a little dilated upward. Cor two-
thirds i diam, p'ish, lobes rounded and
entire. Sta scarcely exerted fil with a
sm truncate or bidentate adnate scale at
base. Cap ovate, rather acute, contain-
ing about 40 oblg and scabrous sds. As
remarked in the Botany of Parke's P. R.
R. Report, this species seems almost
intermediate between Phacelia S. Eutoca
and Whitlavia. It has the cor of the
former, with the lg pedicels and cor-
alline scales of the latter."—T, Bot Mex
Bound 144 (1859).

P. POLYSTACHYA P 5:19.

P. SUESINUATA P 5:19.

P. PAUCIFLORA Wat. Baja.

P. PEDICELLATA G, Syn Fl 2 (1):160.
Baja. Cov 159 Funeral mts. Campo! Mo-
have, Ar.

PHACELIA PHYLOMANICA A. Gray.
G 11:87. A 1:203 d. Z 1:142. B 1:508.

Shrubby below, often more than 6 ft
hi, the largest species known.

Guad (Palmer, Greene).

PHACELIA RAMOSISSIMA Dougl.

Dougl, ex Lehm, Pugill 2:21. B 1:508.
Da 11. Er 1:12. Par 288 t. Br 1:214 Rosa.

Type locality: "dry, rocky plains of
the Columbia, near the Priest's Rapid,
and at the Stony Islands, N. W. Am."

Rosa; Baja; Wash; Az. Da 11.

Jepson, Erythra 1:12.

Hall, U 108.

Hooker, Fl Bor Am 2:80 1838.)

Coville, CNH 4:160. Coso mts.

Variety **SUFFRUTESCENS** Ab 322.

Variety **HISPIDA** G. A 1:171 S.

P. PROCERA G 10:323. B 1:509. 2:467.

P. PUSILLA T, Wat bot king 253. B 1:

511, 515 S. A 1:68.

P. RACEMOSA M 1:58.

P. EUGULOSA Lemmon, P 1:175. A 1:
132 fdr. =affinis.

P. ROTUNDIFOLIA T, Wat bot king
253. B 1:511.

PHACELIA SCABRELLA Greene.

P 1:35, 91 Mig. Z 1:142.

P. SCABIOSA Br 2:185, Magdalena Isl.

P. SERICEA G. Parry, Wyo 7. B 1:508.

P. SETOSISSIMA G. Baja.

P. SUAVEOLENS P 1:233, Sonoma Co,
Cal.

PHACELIA SUFFRUTESCENS Parry.

Dav ac pr 4:38. Greene, Cal ac b 2:407
Cruz. Ab 322 as ramosissima var.

PHACELIA TANACETIFOLIA Benth.

L sc tr 17:280. Ab 323. B 1:508. A 1:202d.

Parish, Erythra 6:90. SBER valley.

Abrams, Fl LA 323. "Monica mts

between Cahuenga Pass and Encino."

Quintin (Palmer, Or).

Bentham, Bot Reg x t 1696 (1834).

Type locality: "California."

Bentham, Hort Soc Lond tr sr 2.

1:479.

Coville, CNH 4:160. Tejon mts.

PHACELIA UMBROSA Greene.

A 1:12 fdr.

P. VIEGATA Greene. A 1:11 fdr.

Variety **BERNARDINA** Greene. A 1:11
fdr.

PHACELIA VISCIDA Torr.

T, bot Mex B 143. Par 273. P 1:91 Mig.

Br 1:204 Cruz, 214 Rosa. Da 12. B 1:513.

Ab 323. A 1:203 d.

SBAR; Cruz; Rosa; Cat; Da 12.

Variety **ALBIFLORA** A. Gray.

Da 12. Ab 323. A 1:203 d.

Fls w, otherwise typical.

PHACELIA WHITLAVIA A. Gray.

G 10:321. Par 293. B 1:513. Da 12. A 1:
203 d

Ha U 108. Jacumba, SD Co (Or 2267).
Da 12.

Abrams, Fl LA 324. Gabriel and
Santa Ana mts.

PHAEOSTOMA Spach, Hist Veg Phan
4:392 (1835) =Clarkia fide IK.

P. DOUGLASSII Spach, Mon Onag 74. B
1:232 as C. elegans.

P. ELEGANS Lilja, Fl Sverig Suppl 25.
=C. elegans fide IK.

PHALACROSERIS G 7:364.

P. BOLANDERII G 7:364. B 1:423.

PHALANGIUM Adams Fam 2:49 (1763).
=Anthericum fide IK.

P. POMERIDIANUM Sweet, Hort Brit
ed 1, 416. B 2:160 as chloragalum p.

P. QUAMASH Pursh Fl 1:226. B 2:158
as camassia esculenta.

PHASEOLUS L. Syst ed 1 (1735).

P. FILIFORMIS Bth, bot Sulph 13. P 1:
288, Cedros, San Bartolome bay. Quintin
(Or 1332).

PHABOTRIUM SUBSESSILE Schimp

Syn Musc Eu.

ed 2. 150. B 2:361 as Pottia S.

PHASCUM L.

P. BRYOIDES Dickson. Eu. B 2:359.

Variety **FILIFERUM** Schimp. B 2:359.
Oakland, Cal.

P. CUSPIDATUM Schreb. Eu. B 2:359.

P. MUTICUM Schreb. Phasc 8 t 1 f 11,

12. B 2:358 as Sphaerangium m.

P. SERRATUM Schreb. Phasc 9 t 2. B
2:358 as Ephemerum S.

P. SUBULATUM L. B 2:359 as *Pleuri-dium* S.

Genus PHEGopteris Fee.

P. ALFESTRIS Mettenius, Fil Hort Lips 83. B 2:345.

P. DRYOPTERIS Fee. B 2:345.

P. POLYPODIODES Fee. B 2:345.

PHELYPAEA Tourn ex L, syst ed 1 (1735).

P. CALIFORNICA Don, DC 11:11. B 1:584 as *Aphyllon* C.

P. BRIANTHERA Wat, bot king 225. B 1:584 as *Aphyllon Californicum*. (E, ex G 7:372 = Ap: multiflorum fide B 1:585.)

P. PESCICULATA Nutt. Parry, Wyo 11.

P. LUDOVICIANA Don, Gen Syst 4:632. B 1:585 as *Aphyllon* L.

P. LUTEA Parry, Wyo 11, 24.

S *Aphyllon*. "Resembles *P. fasciculata*; but the whole plant is of a light y color and more glandular-hairy; ped only about twice the length of fl; cor sulphur-y.—Dry and sandy hillsides. Owl creek, parasitic on roots of grasses."—Parry, Wyo 24. = *Aphyllon fasciculatum* fide IK.

P. PINETORUM G 7:371. B 1:585 as *Aphyllon* p.

P. TUBEROSA G 7:371. B 1:585 as *Aphyllon* t.

PHELANDRIUM L, syst ed 1 (1735). = *Oenanthe* fide IK.

P. AQUATICUM L, sp pl 255. (Pursh = OE. *Sarmentosa* Nutt fide B 1:264.) = OE: *Phealandrium* fide IK.

PHILADELPHUS L syst ed 1 (1735).

P. CALIFORNICUS Bth 309. B 1:202 as *Lewisii* var: C.

P. BORDONIANUS Lindl, bot reg 1838 misc 21. B 1:202.

P. LEWISII Pursh, Fl 1:329. B 1:202.

P. SERPYLLIFOLIUS G, Pl Wright 1:77. Ha 83. Br, Z 4:205 San Pedro Martis mt, Baja.

PHILIBERTIA HBK.

P. HIRTELLA M 3:126 based on heterophylla var: h G.

P. LINZARIS B & H. B 2:464. Baja. (Sarcostemma arenarium Bth, bot sulph 34.)

Variety **HETEROPHYLLA** G. (Sarcostemma heterophyllum E.) Quintin. LA. Sber et SD Co.

Variety **HIRTELLA** G. Syn Fl 2:1. 88. Parish, Er 6:90, Palm Springs, CD. with variety heterophylla. A 1:201 fdr.

Genus **PHILIBERTELLA** Vail.

PHILIBERTELLA HARTWEGII Vail.

Variety **HETEROPHYLLA** Vail.

A 1:201 d. Ab 306.

P. HIRTELLA Vail, T cl b 24:309. M 3:126 as *Philabertia* h.

PHILIBERTIA TORREYI A. Gray.

PHILOZERA.

P. MULTIFLORA P 3:273 S.

PHILONOTIS

P. CALCAREA Schimp. B 2:401 as *Bartramia* c.

P. FONTANA Brid. B 2:401 as *Bartramia* f.

Genus PHLOX Linnaeus.

P. GOODINGII M 3:141 Nev.

PHLOX AUSTRIO-MONTANA Coville. Cov 151. Ha 106.

P. ADSURGENS Tex G 8:256. B 2:465.

P. BRYODES Nutt, Phil ac J, ns, 1:153. B 1:487, Parry, Wyo 5.

P. CAESPITOSA Nutt, lc, 7:41. B 1:487.

PHLOX CANESCENS T-G.

Pac Ry R 2:122. B 1:487. Sber mts

(Parish 1617). Parry, Wyo 5.

PHLOX DOLICANTHA A. Gray.

So Cal (Parish 1838).

PHLOX DOUGLASSII Hook.

Fl 2:73. B 1:486. Cantilles' Parry, Wyo 6, 11, 14. Parish, Z 5:74 San Antonio mts (Hall). Par 254 t.

Variety **LONGIFOLIA** G. Ore, Nebr, SD mts (Parish 424).

PHLOX GRACILIS Hooker.

P 1:141 based on *Gilia* g of Hooker. Da 11. Cov 152 Panamint mts. P 3:300.

Gilia gracilis Dougl, Bot Mag LVI, t 2924 (1829).

Type localities: "on the banks of the Spokane river, and on hi grounds near Flathead river, in Northwest Am."

PHLOX LONGIFOLIA Nutt.

B 1:482, 2:464. Parry, Wyo 5.

Variety **STANSBURYI** A. Gray.

G 8:255. Cov 152.

Panamint mts, Cal. Nev.

Phlox speciosa var. *Stansburyi* T Bot Mex B 145 (1859).

Type localities: "gravelly hills near the Organ mts, NM," and "San Luis mts."

Baja mts! British Columbia; N. M.: Utah.

P. DIFFUSA Bth 325. B 1:486 as *Douglasii* var: d.

P. DIVARICATA Durand, Phil ac J ns, 3:97. B 1:386 as *speciosa*.

P. HOOKEII Dougl, Hook Fl 2:73 t 159. B 1:493 as *Gilia pungens*.

P. HUMILIS Dougl, Hook Fl 2:72. B 1:486 as *longifolia*.

P. MUSCROIDES Nutt, Phil ac J 7:42 t 6 f 2. B 1:487.

PHLOX NANA Nutt.

Baja mts! N. M.; Colo; Texas.

Phil ac J, ns, 1:153.

P. OCCIDENTALIS Durand, Pac Ry R 4:125. B 1:486 as *speciosa*.

P. SABINI Dougl, Hook Fl 2:72. B 1:486 as *speciosa*.

PHLOX SPECIOSA Pursh.

Pursh, Fl 1:149. B 1:486.

Variety **CONGESTA** A. Gray. Parish, 1839. So Cal.

Variety **STANSBURYI** T. Mex bound 145. B 1:486 as *longifolia* var: S.

P. ALEXSIFOLIA P 3:27.

PHOENICHAULIS Nutt, T & G Fl 1:89 (1838). = *Chelranthus* L (fide IK.)

P. CHIRANTHOIDES Nutt, T & G Fl 1:89. B 1:35 as C: *Menziesii*.

PHOENIX L syst ed 1 (1735).

P. CANARIENSIS Hort. A 1:329.

P. DACTYLIFERA L, sp pl 1188. A 1:329 d.

P. BOEBELJENII Z 1:128.

PHOENIX RECLINATA Jacq.

One of the hardest and strongest growing date palms, withstanding sun and wind in the most exposed positions, and valued for its dark green, feathery foliage.

PHOENIX RUPICOLA Anders.

PHOENIX SYLVESTRIS Roxb.

Phoenix tenus Versch Cat (1869) 13, is P. canariensis.

Genus PHOLISMA Nuttall.

PHOLISMA ARENARIUM Nutt.

Monterey to SD! Quintin! CD!
Nutt, in Hook lc Pl 7 t 626 (1844). Cov
147. B 1:464. CD! Baja!
PHOLISMA DEPRESSUM Greene.
A 1:103 fdr, 199 fdr.

Genus PHORADENDRON Nuttall.

Woody plants with terete com jointed
and brittle sts; lvs foliaceous, entire,
faintly nerved, or reduced to connate
scales: fls sunk in the jointed rachis,
com several in axil of each bract: stam
fls with a mostly 3-lobed globose ex,
bearing a sessile transversely 2-celled
anth at base of each lobe: pist fls with
a similar ex adnate to the inferior ova:
berry sessile ovoid or globose, fleshy.
Mistletoe.

PHORADENDRON BOLLEANUM Elch.

Sts 6-9" lg; lvs narly oblq or spatu-
late, obtuse, contracted to a sh petiole,
½-1' lg; bracts ciliolate; spkt sh, mostly
less than ¼' lg, opp or in 4's; berries
w, translucent, lustrous pearly, under
2" in diam. On Juniperus. B 2:105. Da
16.

PHORADENDRON CALIFORNICUM Nt.

Gamb 185. B 2:105. E. Pl Lindh 213.

PHORADENDRON FLAVESCENS Nutt.

Y mistletoe: foliage y'ish g; lvs or-
bicular to ovate or narly elliptic, obtuse,
3½' lg or less, conspicuously 5-nerved
from base and distinctly petioled; fr'g
spk dense, 1½' lg or less; berries w, 2"
in diam. On Populus. B 1:105. Da 16.

Variety **MACROPHYLLUM** E. B 2:105.
Da 16.

Variety **VILLOSUM** E. B 2:105.

PHORADENDRON JUNIPERINUM Em.

PHORADENDRON MACROPHYLLUM
Cockerell.

Foliage deep green; leaves orbicular-
obovate, 5-7 cm lg, com 5-nerved; spikes
large; fls pubescent.

Ab 110; Com on sycamores.

E. ex G. Am ac mem, ns, 4:59. B 2:105.

Variety **LIBOCEDRI** E. Ha 72, not rare
on Libocedrus.

P. FAUCIFLOREM T, Pac Ry R 4:134.

B 2:105 as Bolleanum.

P. VILLOSUM Nutt.

Foliage deep g; lvs elliptic, obtuse, 3-
nerved, pubescent, 2-2.5 cm lg, on sh
petioles; berries pinkish, 3 mm in diam.
Ha 72; "Mistletoe, abundant on Quercus
californica and Q. chrysolepis." Ab
110. B 2:105 as

PHOTINIA Lindl, L sc tr 13:103 t 10
(1821).

P. ARBUTIFOLIA Lindl. bot reg t 491.
P 1:202 Cedros. B 1:188 as Heterome-
les a.

P. FREMONTIANA Decaisne. B 1:188
as arbutifolia.

PHRAGMITES Trin, Fund Agrost 134
(1820).

P. COMMUNIS Trin. lc. R 2:300.

PHYLLODOCE Link. Handb 2:132
(1831). = Acacia fide IK. (Salisb. Parad
Lond t 36, 1806. = Bryanthus fide IK.)

P. ALEUTICA M 1:1.

P. BREWERI M 1:1.

P. EMPETRIFORMIS Don. B 1:456 as
Bryanthus e.

PHYLA Lour. Fl Cochinch 66 [1790]. =
Lippia fide IK.

P. BETULAE FOLIA P 4:48.

P. CANESCENS P 4:48.

P. CEINENSIS Lour, lc. P 4:47. = L:
nodiflora fide IK.

P. REPTANS P 4:47.

P. CUNEIFOLIA P 4:47.

P. LANCEOLATA P 4:47.

P. NODIFLOEA P 4:46.

PHYLLANTHUS L, Gen ed 1, 282
(1737).

P. BRANDEGEI Millsp, Cal ac pr sr 2,
2:218 Baja.

P. CILIATO-GLANDULOSUS Millsp,
Cal ac pr sr 2, 2:219. Baja.

PHYLLITIS

P. LINEATA P 4:106 S.

P. SCOLOPENDRIUM P 3:153.

P. VULGARIS P 3:163 S.

Genus **PHYLOSPADIX** Hooker.

Submerged marine plants with thick-
ened rt-stocks and slender sts, which
bear the infl at the summit or in clus-
ters along the upper part: lvs linear,
sheathing: fls dioe in spathes like those
of zostera: spathes with membranous
edges, the back thickened and termin-
ating in lg lf-like appendages; spadix
with a series of sh dilated foliaceous
flaps, which close over the fl, spreading
open at maturity: stam fls of num ses-
sile sta in 2 rows; anth 1-celled: pist
of simple sessile ovaries, attenuate into
a sh sty; stig 2, capillary: fr beaked by
the sh persistent sty, cordate-sagittate.
P. SCOLLERI Hook Fl 2:171 t 186. B
2:192. A

P. SERBULATUS Rupr ex Aschers,
Linnaea 35:169. Alk.

P. TOBBEYI Wat 14:303. B 2:192. Ab
14. Greene, Cal ac b 2:414 Cruz. Br 1:
217 Rosa.

Sts slender, flat, 0.5 m lg or more,
bearing spathes in clusters along upper
part; lvs 4-8 cm lg, 1-2 mm wide, thick
and smooth; sheaths lg, their margins
membranous; spathes 3-5 in a cluster,
2-4 cm lg, slightly curved; appendages
of the pist spadix elliptic, of the stam
oblq-ovate; fr heart-shaped, 5 mm lg.
San Pedro; La Jolla. Growing on rocks
which are uncovered at low tide.

Genus PHRAGMITES Trin.

PHRAGMITES COMMUNIS Trin.

S D Co (Or 576); San Gregorio, Baja(Br)

PHRAGMITES VULGARIS B.

Europe; Mohave (Coville).

Genus PHYSALIS Linnaeus.

Ann or per herbs with entire or sinu-
ately-toothed lvs; ped in ours solitary
from the lf-axils: ex campanulate, 5-
toothed, in fr enlarged and inflated,
membranous, 5-angled or prominently 10-
ribbed and reticulate, wholly inclosing
the pulpy berry, its teeth mostly conniv-
ent: cor open-campanulate, or rarely
nearly rotate, plicate in bud: sta in-
serted near cor-base; anth oblq, opening
by a longitudinal slit: sty slender: stig
minutely 2-cleft: sds num, reniform,
finely pitted.

PHYSALIS AEQUATA Jacq. f.

B 1:541. Da 12. A 1:209 d. = ixocarpa.

Jacq. f, Eclog 2 t 137.

Davidson, Erythea 1:98. LA.

Parish, Zoe 1:23.

P. CARDIOPHYLLA T, Mex bound 153.
B 1:541 as crassifolia. A 1:210 S.

PHYSALIS CRASSIFOLIA Benth.

B 1:541. Z 1:272. A 1:209 d.

Bentham Bot Sulph 40 (1844).

Type locality: "Bay of Magdalena," Baja.

Coville, CNH 4:167. Funeral mts.

Physalis cardiophylla Torrey, bot Mex B 153, a form with mostly round-cordate lvs.

P. GLABRA Bth, bot Sulph 39. B 1:541. Z 1:272.**P. GREENEI** Rose. Ab 350 Orange Co. Based on pedunculata Greene.Ann, erect-spreading, the flexuous branches angular, 2-3 dm lg; herbage viscid-pubescent throat; lvs ovate or rhombic, acutish, entire or with few shallow teeth, 2-3 cm lg, on slender petioles of about the same length; cor g-y, 12-15 mm broad, fr-ex 10-15 mm lg, pendulous on the slender peduncle, which exceeds it in length. Cedros. SD. **PHYSALIS IXOCAEPA** Brot.

Ann, at first erect, later widely spreading, much branched; st angled, glab, or the young parts sparingly hairy; lvs cordate to ovate, with a cuneate, somewhat oblique base, sinuately dentate or entire, 2.5-6 cm lg; peduncles 2-5 mm lg; ex sparingly hairy, its lobes sh, triangular; cor bright y with p throat, 10-15 mm broad; fr-ex round-ovoid, obscurely 10-angled; berry p. Ab 350—"Frequent in cult fields. Je-S." M 3:77.

P. LOBATA T, NY Lyc ann 2:226. B 1:541.**PHYSALIS MURICULATA** Greene.

Greene, Cai ac b 1:209. Quintin.

Rydberg, Mem Torr cr 4:553. River-side (Parry).

Parish, Zoe 5:117.—"probably Parry's plant was not identical with Greene's."

P. PALMERI G, syn fl 2 (1):235. B 2:471.**PHYSALIS PEDUNCULATA** Greene.

P 1:268 Cedros =Greenei.

See Physalis Greenei.

PHYSALIS CRASIFOLIA Benth.**P. POLYPHYLLA** P 4:150.**PHYSALIS PUBESCENS** Linn.

L. sp pl 183. B 1:541. A 1:210 d.

P. VIEGINIANA P 4:151.**P. WRIGHTII** G 10:63. Rydberg, Torr cl mem 4:331, Cal. = Ar fide Parish, Z 5:117.**PHYSANOCARPA****P. GLABRA** Raf, New Fl 3:73. In part =Neillia capitata fide P 2:28.**PEYSARIA** G, Gen III 1:162 (1848).**P. DIDYMOCARPUS** G, lc. B 1:47.**PHYSOCOMITRUM** Brid.**P. PYRIFORME** Brid. Eu. B 2:387.**PHYSOCARPUS** Maxim in Act Hort Petrop 6:219 (1879). =Neillia fide IK.**P. OPULIFOLIA** Coulter, Rocky mts bot 78. B 2:443. P 2:28 in part as Neillia capitata.**P. OPULIFOLIUS** Maximowicz. P 1:42, 2:28 as Neillia op.**P. RIPARIA** Raf, New Fl 3:73. P 2:28 as Neillia opulifolia.

Variety Tomentella Raf New Fl 3:73. P 2:28 as Neillia opulifolia.

P. TOMENTOSA Raf New Fl 3:74. P 2:28 as Neillia capitata.**P. TORREYI** Coulter, Rocky mt bot 78.

P 2:29 as Neillia monogyna. B 2:443.

Genus **PHYTOLACCA** Linnaeus.

Characters of the family.

PHYTOLACCA DECANDEA L.

Sts branching from a per rt, 1.5-3 dm hl, glab, strong smelling, succulent; lvs oblg-lanceolate or ovate-lanceolate, acute or acuminate at both ends, 1-3 dm lg; petioles 2-8 cm lg; racemes formed at base of branches, becoming opp the lf, peduncled, 5-20 cm lg; pedicels divergent, with a subulate-lanceolate bract at base and com with 2 similar ones above; ex w, 4-6 mm lg; sep orbicular; ova subglobose; sty recurved; berry dark p, 10-12 mm diam. Da 14,—Er 1:99, Monica (Hasse). Ab 135.

PIAEMULA Raf, Fl Tell 2:102 (1836). =Lippia fide IK.**P. CHINENSIS** Raf lc. P 4:47 S.Genus **PICEA** Link.**P. BRACATEATA** Loud, Arb Brit 4:2348. B 2:118 as Abies b.**P. CONCOLOR** Gord, Pinet 155. B 2:118 as Abies c.**P. GRANDIS** Gord Pinet 155. B 2:118 as Abies g.**P. MENZIESII** E. =pungens fide B 2:122.**P. NOBILIS** Loud, Arb Brit 4:2342. B 2:119 as Abies nobilis.**P. PENDULA** B 2:122.**PICEA PUNGENS** Engelmann.

Gard Chr 1879 (1):334. B 2:122.

PICEA SITCHENSIS Carr.

Trautv & Mey, in Middend Reise (Fl Ochot 87). B 2:122.

Genus **PICKERINGIA** Nuttall.

Cx campanulate, turbinate at base, repandly 4-toothed; pet equal; standard orbicular, sides reflexed; wings oblg; keel-pet oblg, distinct, straight, obtuse; sta distinct; sty slightly incurved; stig minute; ped membranaceous, linear, compressed, stipitate, several-seeded, straight.

PICKERINGIA MONTANA Nutt.

Leaves 1-3-foliate; numerous; stamens persistent.

B 1:114, 2:439. Br 1:202 Cruz.

Xylothermia Montana Greene.

Dry hills, Lake Co to SD! Cruz (Br). **PICRADEA** Hook Fl 1:317 t 108 (1833). =Actinella fide IK.**P. BIENNIS** P 3:272.**P. CANESCENS** P 3:271.**P. COOPERI** P 3:273.**P. FLORIBUNDA** P 3:272.**P. LEMMONI** P 3:272.**P. MULTIFLORA** P 3:273.**P. FUMILA** P 3:271.**P. RICHARDSONII** P 3:271. B 1:394 S.**P. RUSBYI** P 3:271.**P. TEKANA** P 3:273.**P. VASEYI** P 3:271.**PICROTHAMNUS** Nutt, Am phil shc, ns, 7:417 (1841). =Artemisia fide IK.**P. DESERTORUM** Nutt, lc. B 1:404 as A: splnescens.**PILOSTYLES** Guill in ann sc nat, sr 2, 2:21 t 1 (1834). =Apodanthes fide IK.**P. THUBBERI** G, Am ac mem, ns, 5:326. B 2:103.Genus **PILULARIA** Linnaeus.**PILULARIA AMERICANA** Al Br.

B 2:352. Underwood, Z 1:100, 101. SBar, SD! Baja! So Am.

FIMPINELLA L, syst ed 1 (1735).

F. APIODORA G 7:345. B 1:260.

PINUS L, syst ed 1. A 1:341 d.

P. ADUNCA Bosc. B 2:127 as insignis.

P. ALBICAULIS E. B 2:124 as flexilis var: a.

P. AMAELIS Dougl? B 2:118 as Abies grandis.

P. ABISTATA E. B 2:125 as Balfouriana var: a.

P. ATTENUATA Ab 5. A 1:341 d.

P. BALFOURIANA Murray. B 2:125. Parry, Wyo 19.

P. BANKSIANA Lamb, Gen Pin 21. Z 1:63.

P. BEARDSLEYI A. Murray. B 2:126 as ponderosa.

P. BENTHAMIANA Hartw. B 2:126 as ponderosa.

P. BOLANDERI Parl, DC 16 (2):379. B 2:126 as contorta.

P. BRACATEATA D. Don. B 2:118 as Abies b.

P. CALIFORNICA Loisel. B 2:127, 128, as insignis.

PINUS CEMBROIDES Zuccarini.

Small, round-headed trees of Arizona and northern Mexico; cones small; sds very large, hard-shelled, largely used for food in Mexico. Lvs slender, mostly in 3's. Pinyone. (Newberry. B 2:124 as flexilis var: albicaulis.)

P. CONCOLOR E. B 2:118 as Abies c.

P. CONTORTA Dougl. B 2:126. Parry, Wyo 6, 11, 13, 19. P 3:69.

Variety **MURRAYANA** E. B 2:126. Da 17. A 1:343 as sp.

P. COULTEI Don. B 2:127. Ab 5. A 1:190d. 341d.

P. CRAIGANA A. Murray. B 2:126 as insignis.

P. DEFLEXA T. Mex bound 209 t 56. B 2:126 as ponderosa var: Jeffreyi.

P. DOUGLASSII Sabine. B 2:120 as Pseudotsuga D.

P. EDGARIANA Hartw. B 2:128 as muricata.

P. EDULIS E. Wislitz R 88. Br, Colo 227, 230, 231.

P. FLEXILIS James, Longs Exp 2:27, 35. B 2:124. Ab 2. A 1:342 d.

Variety **ALBICAULIS** E. B 2:124.

P. FREMONTIANA Endl. Conf 183. B 2:124 et A 1:342 as monophylla.

P. GLABRA Walt. Fl Carol 237. Z 1:128.

P. GRANDIS Dougl. B 2:118 as Abies g.

P. INOPS Bth, 337. B 2:126 as contorta var: Murrayana.

P. INSIGNIS Dougl. B 2:127. A 1:343 as radiata.

Variety **BINATA** E. B 2:128. Greene, Cal ac b 2:413 Cruz. Br 1:217 Rosa.

P. JEFFREYI Murray. Ab 4. Da 17. A 1:190 d, 343 as ponderosa var. Jeffreyi.

Variety **PENINSULARIS** Lemmon. A 1:343d.

P. LAMBERTIANA Douglas. B 2:123. Ab 2. A 1:190d. Ha 53. Gabriel, SBar, SD mts.

Sugar Pine. Becoming a large tree, with light brown smoothish bark, splitting in sm sections; lvs 8-10 cm lg, with 5-6" of stomata on each of the 3 sides; stam cones oval, 1 cm lg, with 10-15 inv scales; anth denticulate-crested; fr'g cones cylindric, bright brown, 2-4 dm lg,

8-10 cm broad, on ped 8 cm lg; sds smooth, blk, 12 mm lg; wing scarcely twice as lg, widest below middle, obtuse; cotyledons 13-15.

P. LLAVEANA T. A 1:342 as Parryana. B2:124 S.

P. LOPHOSPERMA Lindl. B 2:125 as Torrejana.

P. MACROCARPA Lindl. B 2:127 et A 1:342 as Coulteri.

P. MENZIESII Dougl. B 2:122 as Picea Sitchensis.

P. MERTENSIANA Bong. B 2:121 as Tsuga M. M 4:6 fdr.

PINUS MONOPHYLLA T. & G.

M 4:60. B 2:124. Ab 3. A 1:342d.

P. MONTICOLA Dougl. B 2:123.

P. MURICATA Don. B 2:128. P 1:207 Cedros, 197. A 1:190 d.

P. MURRAYANA Murr. P 3:69. Ab 4. A 1:342 d. B 2:126 as contorta var: M.

P. NOELIS Dougl. B 2:119 as Abies n.

P. NUTTALLII Parl, DC 16 (2):412. B 2:112 as Larix occidentalis.

P. PARRYANA E. B 2:124. A 1:94 d, 342 d. W 10:1, Jac, SBar mts.

P. PATTONIANA Parl. B 2:121 as Tsuga P.

P. PONDEROSA Dougl. B 2:125. Da 17. Ab 4. A 1:94 d, 343 d.

Variety **JEFFREYI** E. B 2:126. A 1:343d.

Variety **SCOPULORUM** E. B 2:126.

P. QUADRIFOLIA DC 16 (2):402. Ab 3. A 1:342, 343 as Parryana.

PINUS RADIATA Don.

Pinus insignis London, 1844.

Monterey pine. Largest trees 80-100' high; bark black, very hard, 2-3" thick; lvs bright green, in 3's, 4-6' long; cones chestnut-brown, widely variable, obliquely-oval or longer, 3-7' long, 2-4' thick at base, scales on the outer side, especially at the base in the larger form, swelled out into nearly hemispherical tubercles $\frac{1}{4}$ - $\frac{1}{2}$ " high, twice as broad, becoming devoid of prickles. Largely cultivated for its abundant foliage, great endurance, and rapid growth.

B 2:127, 128 as insignis.

P. SABINIANA Dougl. B 2:127. Ab 4. A 1:343 d.

P. SHASTA Carr, Conf, ed 2, 390. B 2:124 as flexilis var: albicaulis.

P. SINCLAIRII H & A, bot Beech 392 t 93. B 2:128 as insignis (fide Montezumae), in part ponderosa fide IK.

P. SITCHENSIS Bong. M 4:6 fdr. B 2:122 as Picea S.

PINUS SYLVESTRIS Linn.

P. TAXIFOLIA Lamb. Gen Pin, ed 1, 27: t 33. A 1:341 as Pseudotsuga t.

PINUS TORREYANA Parry.

B 2:125. Br 1:217 Rosa; "about 100 trees are growing on the bluffs of the eastern shore." Ab 3. A 1:94 d, 343 d.

P. TUBERCULATA Gordon. Ab 5. A 1:341 as attenuata. B 2:128.

P. VENUSTA Dougl. B 2:118 as Abies bracteata.

Genus **PIPERIA** Rydberg.

Somewhat lfy below, lvs com withering before anthesis, those of st bract-like: fls g'ish or w; sep and pet l-nerved; upper sep ovate or lanceolate, erect; lateral ones spreading, linear to lanceolate, their bases united with the claw of the lip; upper pet free, lanceolate to linear-lanceolate, oblique; blade of lip linear-lanceolate to ovate, obtuse,

truncate or hastate at base; anth cells parallel, opening nearly laterally; stig a sm beak in angle between anth-cells; ova sessile, ellipsoid in fr.

PIPERIA LANCIFOLIA Rydb.

St stout, 3-5 dm hi; basal lvs and lower st-lvs lanceolate, alt, 10-15 cm lg, 1-2 cm wide, withering after anthesis; spk many-fld, lax, 2-3 dm lg; bracts ovate acute, striate, about two-thirds as lg as fls; fls g'ish, 11-13 mm lg; upper sep ovate, obtuse, about 4 mm lg; blade round-ovate, scarcely at all hastate, thick with prominent medium ridge; spur filiform, slightly clavate, about twice as lg as lip and about equaling ova. (Habenaria Unalaschensis of recent authors, in part, not of Spreng.) Ab 94. Monica, Gabriel mts.

PIPERIA LONGISEICA Rydb.

St stout, 3-7 dm hi; basal lvs and lower st-lvs 2-4, lanceolate, acute, 10-15 cm lg, 2-3.5 cm wide, withering about the time of anthesis; spk many-fld, rather lax, 1-3 dm lg; bracts ovate-lanceolate, 5-10 mm lg, acuminate; fls g'ish, about 5 mm lg; lateral sep oblg-lanceolate, obtuse; pet broadly lanceolate; blade of lip ovate-hastate, distinctly auricled and truncate at base; spur filiform, 2.5 times as lg as lip. Ab 95, Monica mts (Hasse).

Genus **PIPTOCALYX** Torrey.

Hispid-canescens low diffusely branching ann, lfy-racemose thruout; cx villous-hispid, 5-cleft to middle, circumscissile near middle, lower scarious part together with sh pedicel persistent; lobes herbaceous, filiform, hispid-bristly, nerveless; nutlets 4, not carinate, margined, scabrous-roughened or smooth and shining, ventral groove divaricate-forked at base.

P. CIRCUMSCISSUS T, Wilkes exp 17: 414 t. 12. Ab 332. P 1:51. B 1:527 as

Strongly hirsute-canescens thruout; sts much branched from base, forming rounded tufts, 4-6 cm hi; lvs linear, those of racemes 4-5 mm lg; fls crowded; cor minute, naked; nutlets oblg-ovate, acute, smooth or minutely punctulate-scabrous.

Abrams, Fl LA 332.—"Frequent in dry stoney or sandy places in the interior foothills and mts. Mt Wilson; Lytle creek canyon; Bear Valley."

P. DICEOTOMUS P 1:60 based on Krynitzkia dichotoma Greene, Cal ac b 1:206.

PIEUS Hall Enum Stirp Helv 1:35 1 (1742). =Pyrus.

P. AMERICANA DC B 1:189.

P. COMMUNIS L. Pear. B 1:188.

P. DIVERSIFOLIA Bong, Veg Sitch 133. B 1:188 as rivularis.

P. MALUS L. Apple. B 1:188.

P. BIVULGARIS Dougl. B 1:188.

P. SAMEUCIOPOLIS C & S. B 1:189.

PISTACIA L. Hort Cliff 456 (1737).

P. MEXICANA HBK, Nov Gen et sp 7: 22 t. 608. B 1:109.

PITAVIA Molina, Sagg Chili ed 2, 287 (1810).

P. DUMOSA Nutt, T & G Fl 1:215. B 1: 98 as Cneoridium dumosum.

Genus **PLAGIOBOTHRYS** F. & M

A 1:204 d. P 1:20 d.

P. ASPER P 3:262.

P. COLORENUS P 3:262.

P. ECHINATUS P 3:262.

P. PARVULUS P 3:261.

P. CALIFORNICUS Greene, Cal ac b 2: 407, based on Echidiocarya Californica G 12:164 (P. Cooperi G 20:285), Cruz. A 1: 13 s. Sber Co. Baja mts!

PLAGIOBATHRYS **CAMPESTRIS** Greene. A 1:13 d.

PLAGIOBOTHRYS CANESCENS A. G. Bth 326. B 1:526 as Eritrichium c. Da 12. Ab 332. Br 1:204 Cruz. A 1:205d.

Variety **APERTUS** P 1:21.

PLAGIOBOTHRYS COOPERI A. Gray.

G 20:285. Ab 333. A 1:205 d.

P. MICROCARPA P 1:21.

PLAGIOBOTHRYS NOTHOFULVUS

G 20:285. Ab 332. Par 42 t. A 1:205 d.

P. FRINGLEI P 1:21 based on Echidiocarya Arizonica G 11:89 et Bth & Hook Gen 2:854.

P. RUFESCENS F & M Z 1:209. A 1:13 s. B 1:526 as Eritrichium fulvum.

P. TENELLUS G. Idaho. M 3:118 Cal.

PLAGIOTHETUM Schimp. =Hypnum fide B 2:416.

P. DENTICULATUM B & S. B 2:417 as H:d.

P. FILIFERUM B & S B 2:417 as H: trichophorum.

P. FULCHELLUM B & S. B 2:417 as H: p.

P. SYLVATICUM B & S. B 2:417 as H: s.

P. UNDULATUM B & S. B 2:417 as H: u.

PLANTAGINACEAE A 1:238 d.

Genus **PLANTAGO** Linnaeus.

Characters of the family. Plantain.

P. EXIOPODA T. B 1:612, 2:478.

G. Pac Ry R 4:117. A 1:238 d. B 1:612.

P. ASIATICA L, sp pl 113. B 2:478 as major. Var: a.

P. COROMOPUS Z 1:144.

P. DURVILLEI Delile ex Steud nom ed 2, 2:348. = hirtella?

Variety **CALIFORNICA** F & M. B 1:611 as virginica var: maxima.

P. GNAPHALODES

Greene, Er 1:23.

P. KAMTSCHATICA H & A, bot Beech 156. B 1:611 as Virginica var: maxima.

P. GOODINGII M 3:142, Nev.

PLANTAGO BIGELOVII A. Gray.

Greene, Er 1:23. BC; Colo.

Abrams, Fl LA 377. Inglewood.

PLANTAGO ERECTA Morris.

Ab 376. A 1:238d, 239.

Plantago patagonica Californica Greene

Man bay reg. 236 (1894).

California; Oregon.

Abrams, Fl LA 376.

Variety **OEVERSA** Ab 377. A 1:238d.

A more robust form; lvs with few to several callous denticulations; scapes usually num; spikes 15-40 cm long; cap circumscissile near the middle.

PLANTAGO HIRTELLA H. B. K.

HBK Nov Gen et sp 2:229. Ab 376. P 1: 92 Mig. A 1:239 d.

San Francisco to Chile.

PLANTAGO IGNOTA Morris.

A 1:239.

Ft. Verde, Arizona (E. A. Mearns 199): northern Baja California.

PLANTAGO LANCEOLATA Linn.

B 1:611. Ab 376. Da 14, Er 1:99 LA Co Parish, Z 1:125. A 1:239 d.

Ribgrass or English plantain; widely

naturalized. Europe.

P. MACROCARPA C & S. B 1:612.

PLANTAGO MAJOR Linn.

Camerarius, Epit 261 (1586). B 1:612, 2: 478. Da 14. Ab 376. A 1:239 d. L, sp pl 112. Greene, Cal ac b 2:410 Cruz.

Plantain; a common weed; widely naturalized. Europe.

PLANTAGO MARITIMA Linn.

L, sp pl 114. B 1:611.

Per or bien: the thick crown more or less woolly among the bases of the lvs, which are linear, usually much fleshy-thickened, entire or with a few scattered sharp teeth: scapes a span or less hi, bearing a dense many-fld oblg or cylindrical spike: sep scarious-membranaceous with a thickish g centre, which in the posterior ones is crested: cap oft more or less 3-4-celled, 1 sd in each cell. Widely dispersed over the world and variable.

P. MINOR Gilib, Fl Lituan 1:15. Parish Z 1:125. =major fide IK.

PLANTAGO OBLONGA Morris.

A 1:239.

Colorado Desert, California (Orcutt).

PLANTAGO OBERVERA Morris.

A 1:239 as erecta var: 0.

Del Mar, San Diego County, California (Belle Sumner Angier 21).

Plantago erecta Morris in part; Torr bot. cl. b. 27:118 (1900).

PLANTAGO PATAGONICA Jacq.

British Columbia to Patagonia. Ic Rar t 306. Parry, Wyo 4. Brit Am to Patagonia. Da 14. B 1:611, 2:478. Greene, Cal ac b 2:410 Cruz. Br 1:216 Rosa. P 1:266 San Benito Isl; 92 Mig. A 1:239.

Variety **NUDA** G. A 1:239.

Variety **CALIFORNICA** Greene. A 1: 239 as erecta.

Ha 121. A 1:239. Baja! SD Co!

Variety **AEISTATA** G. A 1:239 fdr.

Variety **GNAPHALOIDES** A. Gray.

Baja! San Diego Co.!

PLANTAGO PICTA Morris.

A 1:239.

Utah, Arizona, Southern California (Parish 2643).

P. PURPURESCENS Nutt. B 1:611 as Virginia var: maxima.

P. FUSILLA Nutt Gen 1:100. B 1:612.

PLANTAGO SPECIOSA Morris.

A 1:239.

Santa Catalina Island, California (G. B. Grant 2412).

PLANTAGO VIRGINICA Linn.

L, sp pl 113. B 1:611, 2:478.

Variety **LONGIFOLIA** A. Gray.

San Jnlo. Baja Cal (Br).

PLATANACEAE A 1:329d.

PLATANUS Rich. in mem mus Par 4:48 (1818). = Habenaria fide IK.

P. ELEGANS Lindley, Gen et sp Orch 285. B 2:133 as H: e.

P. FOETIDA Gever, ex Hook, Kew J 7: 376. B 2:134 as H: unalaschensis. = Herminium congestum fide IK.

P. GRACILIS Lindl, Gen et sp Orch 288. B 2:135 as H: g.

P. LEUCOSTACHYS Lindl, lc, 288. B 2: 134 as H: l.

P. ORBICULATA Lindl, lc, 286. M 1: 127 S.

P. STRIATA Lindl, lc 288. B 2:135 as H: gracilis.

PLATANUS L. A 1:330 d.

P. CALIFORNICUS Bth, bot Sulph 54. B 2:66 as racemosa.

P. OCCIDENTALIS L, sp pl 999. (B 2: 66 as racemosa as to H & A, bot Beech 160, 390 only.)

P. RACEMOSUS Nutt. B 2:66. Da 16. Ab 195. A 1:97 d, 330 d. Parish, Z 4:3.

PLATONIA Mart Nov Gen et sp 3:168 t 289 (1829).

P. NUDIFLORA Raf, Med Rep NY 5:352. P 4:47 S. =Lippia nodiflora.

PLATYLOMA J. Smith.

P. BELLUM T. Moore. B 2:340 as probably Pellaea brachyptera.

P. BRACHYPTERUM T. Moore. B 2:340 as Pellaea b.

PLATYSPERMUM Hook Fl 1:68 t 18 B (1829).

P. SCAPIGERUM Hook Fl 1:68. B 1:27.

PLATYSTEMON Benth.

P. PURPURATUS P 5:158, 168.

P. VILLOSUM P 5:158, 165.

P. LEOCARPUS F & M. P 5:158, 163. M 3:98.

P. CONTORTUS P 5:159, 175.

P. PETEINUS P 5:159, 166.

P. RIGIDULUS P 5:159, 167.

P. ACULEOLATUS P 5:159, 167.

P. CONFERTUS P 5:159, 176.

P. MAHAVENSIS P 5:159, 176.

P. ENEMONOIDES P 5:159, 177.

P. CAPSULARIS P 5:159, 165.

P. NUTANS P 5:159, 192.

P. CERNITHOPUS P 5:159, 167.

P. SPHAEROCARPUS P 5:159, 168.

P. COMMUNIS P 5:159, 169.

Variety **STYLOSUS** P 5:170.

P. TORTUOSUS P 5:159, 170.

P. TESSELLATUS P 5:159, 171.

P. PROXIMUS P 5:159, 172.

P. NIGRICANS P 5:159, 174.

P. CRENATUS P 5:159, 175.

P. COMMIXTUS P 5:159, 176.

P. EMARGINATUS P 5:159, 172.

M 3:98 as lelocarpus.

P. ARVOREUM P 5:159, 174.

P. QUERCETORUM P 5:159, 173.

P. HYACINTHINUS P 5:160, 180.

P. ANTONINUS P 5:160, 180.

P. MENDOCINUS P 5:160, 180.

P. HETERANDER P 5:160, 180.

P. GLYPTOLOBUS P 5:160, 182.

P. EXSCULPTUS P 5:160, 182.

P. RUGOSUS P 5:160, 183.

P. PECTINATUS P 5:160, 184.

P. SUBEREUS P 5:160, 184.

P. PILOSELLUS P 5:160, 185.

P. PENICILLATUS P 5:160, 185.

P. OBTECTUS P 5:160, 186.

Variety **SANCTARUM** P 5:186.

P. ACUTATUS P 5:160, 187.

P. TURBINATUS P 5:160, 188.

P. ROBRIDULUS P 5:161, 178.

P. AUSTRALIS P 5:161, 191.

P. LEUCANTHEUS P 5:161, 188.

P. REMOTUS P 5:161, 190.

P. MICROLOBUS P 5:161, 189.

P. ARIZONICUS P 5:161, 190.

P. ELEGANS P 5:161, 178.

P. LEPTANDER P 5:161, 190.

P. VERECANDUS P 5:161, 191.

P. HISPIDULUS P 5:161, 193.

P. CERNUS P 5:161, 193.

P. SETOSUS P 5:161, 194.

P. CALIFORNICUS Bth, Hort sc tr, sr 2. 1:405. Br 1:207 Rosa; 1:113 Cat. Ha 81. Ab 159. Par 116 t. P 1:85 Mig.

Greene, Cal ac b 2:389 Cruz. A 1:156 d, Da 2. B 1:19. Z 1:278. P 5:139, 158, 161.
P. CRINITUS P 2:13. A 1:156 fdr. P 5:160, 179.

P. DENTICULATUS Greene. A 1:97 s. Da 2. P 5:144 S. M 4:65.

P. OREGANUS Cur. Cal ac pr sr 2, 1:242. P 5:141 S. A 1:97.

P. LINEARIS Curran. A 1:97.

PLATYSTIGMA Bth. A 1:156 d.

PLATYSTIGMA CALIFORNICUM B.-H. B 1:20. Br 1:224 cites *denticulatum* Greene, as a synonym. P 5:142 as Torreyi. A 1:77 d, 97 s. SF, south.
P. DENTICULATUM Greene. T cl b 13:218. P 5:144 S. Greene, Cal ac b 2:389 Cruz. Ab 159. =californicum. A 1:156, 97 s.

P. LINEARE Bth. A 1:156 d, 97 s. B 1:20. P 5:139, 146 s.

P. OREGANUM B 1:20. P 5:141 s. A 1:97 s.

Genus **PLECTRITIS** DC.

"Fr winged or wingless, its ventral face broader than, or = to one of the lateral faces, but nar'er than the other; wings incurved below, less incurved or nearly erect or spreading above. Cotyledons parallel to the broadest of the lateral faces, with indistinct or invisible lateral veins when expanded."—Suksdorf, Er 6:22.

P. CONGESTA DC B 1:287. SD! British Columbia.

Variety **MINOR**. Ab 382. A 1:340 as macrocera.

P. BRACHYSTEMON B 1:287 as

P. MACROCERA T & G B 1:287, 2:453. Ha 122. A 1:340 d.

P. MINOR Ab 382. A 1:340 as macrocera.
PLEUROPHIS T, Ann NY Lyc 1:148 t 10 (1824). =Hilaria fide IK.

P. JAMESII T, lc. B 2:293. =H: J.

P. RIGIDA Thurber. B 2:293. Da 19. =H: r.

PLEURICOSPORA G 7:369.

P. FIMBRIOLATA G 7:369. B 1:463, 2:462.

PLEURIDIUM Bridel.

P. STRAMINEUM Lesq. B 2:359 as subulatum.

P. SUBULATUM B & S. B 2:359.

PLEUROGYNE Esch ex C & S, Linnaea 1:187, 188 (1826).

P. ROTATA Griseb, Gen et Sp Gent 309. B 1:478.

PLEUROPOGON R Br in Parry, 1st Voy supp 289 (1824).

P. DOUGLASII Trin ex steud nom ed 2, 2:355. B 2:307 as Lophochlaena Californica Nees.

PLUCHEA Cass. A 1:186 d.

P. BOREALIS G 17:212. A 1:186 as sericea.

P. CAMPHORATA DC 5:452. Ab 407. Da 8. B 1:334.

P. SERICEA Cov Ab 407. A 1:186 d.

PODOSEMUM Desv in Nouv b sc Philom 2:188 (1810). =Muehlenbergia fide IK.

P. DEBILE HBK, Nov G 1:128. B 2:278 as M: d.

P. GRACILE HBK. B 2:277 as M: g.

P. QUADRIDENTATUM HBK. B 2:277 as M: gracile.

P. SETOSUM HBK, Nov G 1:128. B 2:278 as M: debile.

PODOSCLADIUM G 7:345 (1868).

P. BOLANDERI G 7:346. B 1:263.

P. CALIFORNICUM G 7:346. B 1:263.

PODOSTIGMA Ell Sketch 1:326 (1817).

P. PUBESCENS Ell, lc. P 3:207 s.

PODOSTEMMA

P. AUSTRALE P 3:238.

P. EMORYI P 3:237.

P. HELLERI P 3:236.

P. LEONINUM P 3:237.

P. LINDHEIMERI P 3:236.

P. LONGICORNU P 3:236.

P. NYCTAGINIFOLIUM P 3:237.

POGOGYNE Bth Lab Gen et sp 414

(1834). A 1:364 d.

P. DOUGLASII Bth, Lab 414. B 1:597. Jepson, Er 1:16. "very abundant, em-purpling meadows in Big Valley."

P. MULTIFLORA Bth, Lab 414. B 1:597 as

P. NUDIUSCULA G, B 1:397. A 1:364 d. Mesas, SD! Baja!

P. PAEVIPOLEA Bth, Lab 414. B 1:597.

P. SERPYLLOIDES G 7:386. B 1:598. A 1:364 d. Quint!

P. TENUIFLORA G 11:100. Guad. B 1:597. A 1:364.

P. ZIZYPHOIDES Bth 330. B 1:597.

POGONATUM Beauv.

P. ALPINUM Bridel. B 2:402.

Variety **BREVIFOLIUM** Schimp. B 2:403.

P. CONTORTUM Lesq. B 2:403.

POHLIA =Bryum.

P. ARCTICA R Br, Schwaegr suppl t 172. B 2:392 as Bryum a.

P. INCLINATA Swartz. B 2:392 as Bryum i.

P. POLYMORPHA Hoppe & Hornsch. B 2:390 as Bryum p.

P. WARRENENSIS Schwaegr. B 2:393 as Bryum Warneum.

POLANISIA Raf, Am mo mag 1818, 267. =Cleome.

P. GRAVEOLENS Raf lc 242. B 1:51. =C: g.

P. TRACHYSPERMA T & G Fl 1:669. B 1:51.

P. UNIGLANDULOSA DC 1:242. B 1:51 as C: u.

P. TENUIFOLIA T & G Fl 1:123. P 4:212 S. =C: t fide IK.

POLEMONIELLA.

P. MICRANTHA M 1:57.

Genus **POLEMONIUM** Tournefort.

Per: lvs alt, pinnate, lfsts sessile: fls showy, bl or w, in racemes thyrses or panicles: ex herbaceous thruout, not scarious below the sinuses, accrescent: cor from funnelliform to nearly rotate: fl more or less declined and hairy at base: sds few or several in each cell. "Jacob's Ladder."

P. BRANDEGEI P 1:126 based on Gilia B.

PCLEMONIUM COERULEUM Linn.

Parish, Erythra 7:94, Sber mts (Hall).

L, sp pl 162. P 1:125. B 1:500. Par 280.

P. CAPITATUM Bth, DC 9:317. B 1:500 as humile.

P. CARNEUM G, syn Fl 2 (1):151. B 1:500. P 3:305. Par 278. P 1:124. Oak woods of central and northern Cal.

POLEMONIUM CONFERTUM A. Gray.

Phil ac pr 1863, 73. B 1:500. P 1:126; 3:305. Parry, Wyo 6, 11. Nev.

Variety **MELLITUM** Br, Colo 228.

P. ELEGANS P 3:305.

P. EXIMUM P 3:305.

P. FILICINUM P 1:124. Pinos Altos mts, NM.

P. FLAVUM Greene, bot gaz 6:217. P 1: 124. NM, Ar G, Syn Fl Suppl 412.

P. FOLIOSISSIMUM G, Syn Fl 2 (1): 151. P 1:125. Colo mts.

P. HUMILE Willd in Roem & Sch syst 4:792. P 1:125. B 1:499, 2:466. Arctic Am and Asia. Parry. Wyo 14, var = parvifolium Nutt.

POLEMONIUM MICRANTHUM Benth. British Columbia to Chli; Tehachapi mts (Curran).

DC 9:318. B 1:499. P 1:123. M 1:57 S.

P. OCCIDENTALE P 2:75 based on "caeruleum of the Rocky mts of Colo and the Cal sierras." P. Parvifolium Nutt. Parry, Wyo 14 (=humile var). P. pectinatum Greene, Cal ac P 1:10. P 1: 125 Wash.

P. PULCHELLUM Bunge, in Ledeb Fl Alt 1:233. P 1:124 Colo; Cal. B 1:500 S. G, Syn Fl 2 (1):150 as humile var.

P. FULCHERRIMUM Hook bot mag t 2979. B 1:500 as humile.

P. REPTANS L, Lam III t 106. G, Man, ed 5, 371; Syn Fl 2 (1):151. P 1:124, Miss valley; NY.

P. RICHARDSONI Grah, bot mag t 2800. B 1:500 as humile.

P. VISCOSUM Nutt, Gamb 154. P 1:125 Rocky mts; 3:305. B 1:500.

POLYANTHERIX Nees, Ann Nat hist sr 1, 1:284 (1838). =Elymus fide IK.

P. HYSTRIX Nees, lc. B 2:327 as E: Sitanion.

Genus POLYCARPON Linnaeus.

Loeff, It 7 (1758). A 1:265 d.

POLYCARPON DEPRESSUM Nuttall.

Jepson, Fl Mid Cal 171. Monterey Co. Abrams, Fl LA 149.—"Not common."

T & G Fl 1:174. Ab 149. Da 3. B 1:71. A 1:26d, 265d.

P. TETRAPHYLLUM L, syst ed x, 881. B 1:71.

POLYCODIUM Rafin, Am mo mag 1818: 266. =Vaccinium fide IK.

P. CAESIUM P 3:325.

P. ELEVATUM P 3:324.

P. FLORIDANUM P 3:325.

P. OBLONGUM P 3:325.

P. REVOLUTUM P 3:325.

P. STAMINEUM P 3:324.

POLYGALA L, syst ed 1. A 1:128 d.

P. ACANTHOCLADA G 11:73. B 1:59. Br, Colo 234.

P. ALBA Nutt, Gen 2:87. P 3:307 s.

P. APOPETALA

"The finest example seen was 15° hi or more, with ends of branches terminated by racemes of showy fls in full bloom." "Abundant in the Sierra de Laguna, a range of mts near Todos Santos, in Lower California, that reach an altitude of nearly 5,000°."—Br, Z 1:45.

P. CALIFORNICA Nutt. T & G Fl 1: 671. B 1:59. 2:433. Ab 231. McClatchie. Br 2:123, Gabriel mts. Par 292 t. A 1: 128d.

P. COENUTA K 1:62. Par 292. Cur 1: 132 as Californica. B 1:59 S.

P. CUCULLATA Bth 299. (Newberry, Pac Ry R 6:70 =californica.) B 1:59, 2:433 S.

P. OVALIFOLIA DC 1:331. Mex. B 1:59.

P. PUBERULA G, Pl Wright 1:40. Z 1: 271. Tex.

P. NUTKANA T & G Fl 1:671. B 1:59 as Californica (T. Mex bound as cucullata).

P. XANTI G 5:153. B 1:59. Z 1:271.

P. LONCHOPHYLLA P 3:307.

P. SENECA P 3:307.

P. TORREYI P 3:307.

P. SUBSPINOSA Wat, Am nat 7:299. B 1:59.

"Per, herbaceous, glab or more or less pubescent; sts 2-8' hi, branched above, the branches oft spinose; lvs scattered, $\frac{1}{2}$ -1' lg, oblg or oblanceolate, acute or obtuse, attenuate to base; raceme loose, few-fld; bracts sm and scarious; pedicels becoming reflexed, sh'er than fls; sep naked or ciliate, the wings oblg, 4-5" lg and equalling pet; keel hooded, crested with a broad saccate process; sty linear; cap orbicular, emarginate, sh-stipitate.—Near P. Nutkana, which has a linear or horn shaped-crest and is always nearly or quite glab and without spines. Silver City, Nev (Kellogg, 1862), pubescent and very spiny; Ari (Palmer), densely pubescent but without spines; Kanab, southern Ut (Mrs. E. P. Thompson), glab and spiny. Fls maroon and y; on mountain summit; Je."—Wat, Am Nat 7:299 (My 1873).

Genus POLYGONUM Linnaeus.

An or per, terrestrial or aquatic herbs, with alt entire lvs and naked, ciliate or foliaceous margined sheaths: fls com perfect, often colored, variously clustered: pedicels jointed: cx 4-5-parted, com petaloid, outer seg slightly larger than inner ones: sta 5-9; fl glab; anth oblg; sty 2-3-parted or 2-3-cleft; stig capitate; ak lenticular or 3-angled, invested by persistent cx.

POLYGONUM ACRE H B K.

Nov Gen et sp 2:179. B 2:14, 480. Cov 191. Da 14. Er 1:102. LA Co.

Type locality: "locis abditis, udis prope Havanam et Caracas, (ad ripas Guayri, Calle de S. Juan et de S. Bartolome), alt. 0-414 hex."

POLYGONUM AMPHIBIUM Linn.

Western Europe to China; Wash. to Baja.

L, sp pl 1:361 (1753). Cov 191. B 2:13, 480. 14 S.

POLYGONUM AVICULARE Linn.

Europe; widely naturalized; S D! Cruz; Rosa.

L, sp pl 362. Cov 191. Ab 122. Z 1:126. Da 14. B 2:11. Greene, Cal ac b 2:411 Cruz. Br 1:216 Rosa. Ha 76. Da 14, Er 1:99 LA Co. Pac rural press 28:511.

Ann or per, slender, glab bluish-g; st prostrate or ascending, simple or much branched, 1-6 dm lg lvs linear to oblanceolate, com oblg, 6-18 mm lg, nearly sessile; sheath oblique, 2-parted or becoming lacerate; fl-clusters axyl, 1-5-fld; fls sm, sh-pedicelled; cx g, its 5 lobes with w or pinkish margins; sta 5-8, sty sh 3-parted to near base; ak 3-angled, ovoid, 2 mm lg, reticulated. Bird's knot-grass. A com weed in N Am. Yard grass.

P. BIDWELLIAE Wat 14:294. B 2:479.

B 2:14, 480. =bistortoides Pursh.

POLYGONUM BISTORTA Linn.

Throughout the northern hemisphere.

P. BISTORTOIDES Pursh, Fl 1:271. Ha

76. Cov 191.

Type locality: "in low grounds on the banks of the Missouri, called Quamash-flats." Type collected by Lewis and Clark.

P. CONVOLVULUS L. Ab 123. McClatchie, Er 2:78. Pasadena. B 2:15.

An glab, scurvy; st twining or trailing, branched, 1-10 dm lg; lvs ovate-sagittate, lg-petioled, acuminate, slightly ciliate, 1-7 cm lg; sheath oblique, rough on margin; axyl clusters loosely fld; fls g'ish, pendulous on slender pedicels; cx 5-parted, closely investing ak; sts 8; sty sh; nearly entire; stig 8; ak 3-angled, granular. Black bindweed. Introduced, about Mt Shasta, Berkeley, etc.

P. BOLANDERI G 8:400. B 2:11.

P. CALIFORNICUM Meisn, DC 14:100. Jepson, Er 1:14, "Eel river near Hullville." B 2:13.

P. COARCTATUM Dougl, DC 14:101. B 2:12.

P. DAVISIAE G 8:399. B 2:15.

P. DOUGLASSII Greene, Cal ac b 1:125 (tenue of B.). Ha 76.

P. DUMETORUM L, sp pl, ed 2, 521. B 2:15.

P. ERECTUM Vell, Fl Flum 162; 4; t 42. B 2:11. Brazil. (L, sp pl 363 = aviculare fide IK.)

POLYGONUM FUSIFORME Greene.

A 1:86 fdr.

P. GREENEI Wat 14:295. B 2:480.

POLYGONUM HARTWRIGHTII A. G. Hanson's! Plumas Co; Utah; N Y.

G 8:294. B 2:14.

P. HYDROPIPER Michx. Fl 1:238 = acre. B 2:14.

P. IMBRICATUM Nutt, Wat, Am nat 7:665. B 2:12.

POLYGONUM HYDROPIPEROIDES Mx. Frequent along streams, especially toward the coast.

Michx, Fl 1:239 (1803).

Type locality: "In Pa, Va, Carolina." Southern California. (Parish 1872).

Ab 122. A 1:212 d.

P. AECUATUM P 5:201.

P. LINEARIFOLIUM P 5:197.

P. FALLAX P 5:200.

P. CEPHALOPHORUM P 5:198.

P. VULCANICUM P 5:198.

P. JEJUNUM P 5:198.

P. BERNARDINUM P 5:199.

P. GLASTIFOLIUM P 5:199.

P. OMISSUM P 5:200.

P. CONSIMILE P 5:202.

P. VAGANS P 5:202.

P. FLEXILE P 5:203.

P. EMERSUM Britton. M 3:74.

POLYGONUM INCARNATUM Ell.

Sketch 1:456. Da 14. Ab 122. A 1:212d.

Abrams, Fl LA 122. Marshes about LA.

Davidson, Erythra 1:99 LA Co.

POLYGONUM INCURVATUM Ell.

POLYGONUM LAPATHIFOLIUM L.

L, sp pl 360. Ab 122. A 1:212d.

P. MINIMUM Wat. bot king 315. B 2:11.

P. MUELENBERGII Wat 14:295. B 2:13.

POLYGONUM NODOSUM Pers.

Syn 1:440. B 2:13. Da 14. Z 1:126. Ab 122 s. =laphathifolium fide IK.

Europe; Asia; Oregon to Baja; N M.

Parish 2:126.

Davidson, Erythra 1:99, 102, LA Co. **P. PARONYCHIA** (A Meyer, Verz Pf) Cauc 158. B 2:10.

P. PARRYI Greene, T cl b 8:99. Sierra Nevada. Jepson, Er 1:14. Eel river near Hallville. Parish, Er 6:87 Cuyamaca.

P. PENNSYLVANICUM L, sp pl 362. B 2:13.

P. PERSICARIA L, sp pl 361. B 2:14, 480.

P. POLYGALOIDES Meisn, DC 14:101. B 2:12.

P. POLYMORPHUM Ledeb, Fl Ross 3: 524. B 2:15. =alpinum fide IK.

P. RAMOSISSIMUM Michx Fl 1:237. B 2:12.

P. SEASTENSE Brewer, G 8:400. B 2:11.

POLYGONUM TENUE Michx.

Atlantic to the Pacific; Cuyamaca (Palmer).

B 2:12.

P. TORREYI Wat, Am nat 7:664. B 2:12 as minimum.

P. VIVIPARUM L, sp pl 360. B 2:15.

P. WATSONI Small, Mon NA Polyg 138. Ha 76. (Imbricatum of B.)

POLYPAPPUS Nutt, Phil ac J, ns, 1: 178 (1847). = Tessaria fide IK.

P. SERICEUS Nutt, lc. B 1:334 as T: borealis. A 1:186 s.

POLYTRICHARDELPHUS

P. LYALLII Mitten, J L sc 8:49. B 2: 402 as Oligotrichum L.

POLYTRICHUM Dill.

P. ALPINUM L. B 2:402 as Pogonatum a.

P. ANBUSTATUM Hook. B 2:402 as Catharinae a.

P. BREVIFOLIUM R Br, Parry's Voy suppl. B 2:403 as Pogonatum alpinum var: b.

P. COMMUNE L. Ore. B 2:403.

P. CONTORTUM Menzies. B 2:403 as Pogonatum c.

P. DENTATUM Lesq (not Menz). B 2: 402 as Pogonatum contortum.

P. FORMOSUM Hedw. Eu. Ore. B 2:403.

P. JONIFERINUM Hedw. B 2:403.

P. LAEVIPILUM Hampe. B 2:403 as piliferum.

P. PLIFERUM Schreb. B 2:403.

P. UNDULATUM Hedw B 2:402 as Catharinae Callibryon.

Genus **POLYPODIUM** Linnaeus.

POLYPODIUM CALIFORNICUM Kaulf. California; extremely variable.

Genus **POLYSTICHUM** Roth.

POLYSTICHUM MUNITUM Presl.

Aspidium munitum Kaulf.

California to Alaska.

POPULUS L. A 1:358 d.

POPULUS ANGUSTIFOLIA James.

Parish, Er 3:60.—"Rattlesnake canon and Grout creek, at about 5,000° alt, in SBer mts. Infrequent. A sm tree, not exceeding 20° in height, growing by stream banks. The nearest previously recorded station is in eastern Ar.

Parish, Erythra 3:60, SBer mts.

Long's exp 1:497, ex T, Ann NY Lyc 2:249. B 2:91.

P. BALSAMEA Parry, Wyo 9.

P. BALSAMIFERUS vars. B 2:91 as trichocarpa.

P. FREEMONTII Wat 10:350. B 2:92. Ab

99. A 1:358 d. Cov 200.

Type locality: "on Deer creek at Lasens" in the upper Sacramento Valley." Variety **WISLIZENI** Wat. Br 1:204 Cruz. A 1:359 d.

P. MONILIFERA Ait, Hort Kew 3:406. Cov 200. Sber mts, etc. Canada. B 2:92 as.

P. MONTICOLA Mert ex Loud Arb 3: 1645. Z 1:274. =tremula fide IK.

P. TREMULOIDES Michx Fl 2:243. B 2:91.

P. TRICHOCARPA T & G, Hook Ic 9: 878. Cov 200. Ab 99. Da 16. B 2:91. Br 1:216 Rosa. Greene, Cal ac b 2:412 Cruz. A 1:359 d.

Genus **POROPHYLLUM** Vaillant.

Bth, bot Sulph 29. B 1:399. P 1:205.

POROPHYLLUM GRACILE Benth.

Texas; SD; Cedros; CD! Magdalena Island (Br).

P. GREGGII G. Pl Wright 1:120. = gracile et scoparium fide IK.

Variety **MINOR** G. B 1:399 as gracile.

PORTERELLA T. Hayd R Geol Surv Mont 488 (1872). = Laurentia fide IK.

P. CARNULOSA T. lc. Parry, Wyo 17. (Lobelia carnosula Bth.) B 1:444 as Laurentia carnosula.

POTESIUM L.

P. ANNUUM Nutt, Hook Fl 1:198. B 1: 186.

P. OFFICINALE B & H. B 1:186.

PORTULACACEA A 1:163 d.

PORTULACA L, syst ed 1 (1735). A 1: 163 d.

P. GRANDIFLORA Hook, bot mag t 2885. B 1:74.

P. OLERACEA L, sp pl 445. B 1:74. Da 3. Ab 142. A 1:164 d.

P. FILOSA L, sp pl 445. B 1:74.

P. EFFUSA E, Pl Lindh 2:154. Br, Colo 233. B 1:74.

Genus **POTAMOGETON** Tournefort.

Per herbs: lvs alt or uppermost oft opp, oft of 2 kinds, submerged and floating, the floating elliptic or ovate, the submerged linear: spikes sheathed by stipules in bud; ped axy, bearing sm perfect fls; perianth seg 4, herbaceous concave, valvate in the bud, short-clawed; sta 4, inserted on claws of perianth seg; anth sessile; ova 4, sessile distinct 1-celled, 1-ovuled, attenuate into a sh erect or recurved sty.

P. AMELIFOLIUS Tuckerm, Am J sc sr 1, 45:38. B 2:196.

P. CLAYTONI Tuckerm, lc. B 2:195. Ha 54.

P. COMPRESSUS Fries. B 2:197 as zosteraceifolius.

P. GRAMINEUS L, sp pl 127. B 2:196.

P. HETEROPHYLLUS Schreb. spicifl Fl Lips 21. B 2:196 as gramineus.

P. FOLIOSUS Rafin, Med rep NY, sr 3, 2:409 (1811). =pauciflorus fide IK.

Variety **CALIFORNICUS** Morong.

Sts 3-1 m lg, much branched, flattened or winged; lvs 3-5 cm lg, 2 mm wide, 3-nerved or sometimes 5-nerved toward base; stipules free from the lvs, sm w, becoming setose; peduncles 8-12 mm lg, erect, clavate, flattened, spikes subcapitate, 6-12 fld; fr lenticular or nearly orbicular, about 2 mm lg, 3-keeled on back, middle keel winged.

POTAMOGETON PUSILLUS Linn.

sinuate-dentate, face strongly angled or arched; sty apical. Lvs submerged. Ab 11.—"Occasional in streams and irrigating ditches in our interior valleys. Je-S."

P. FLUITANS Pursh Fl 1:120. = Claytoni fide IK. (Roth, Tent Fl Germ 1:72; 2:202 =lonchites fide Ab 10?).

P. LONCHITES Tuckerm, Am J sc sr 2, 6:226. =lucens fide IK. Ab 10. B 2: 196.

Sts 1-2 m lg, much branched; floating lvs rather thin, elliptic, pointed at both ends, 5-10 cm lg; submerged lvs linear-lanceolate, 10-15 cm lg, 4-20 mm wide, rounded at base or tapering into a petiole; stipules 2-8 cm lg, free from lvs; peduncles thickening upward, 4-6 cm lg; spikes dense, 2-4 cm lg; fr 4 mm lg, obliquely obovoid, sides smooth, 3-keeled on back.

POTAMOGETON LUCENS Linn.

L, sp pl 126. B 2:196. Parish Er 6:85, Tenasquitas creek. SD Co.

P. MARINUS L, sp pl 127. Eu. B 2:198.

P. MONTANUM Presl, Rel Haenk 2:85. B 2:196 as lonchites?

POTAMOGETON NATANS Linn.

L, sp pl 126. B 2:195, 196 s. Ab 10, Bear.

Sts 1-1.5 m lg, simple or sparingly branched; floating lvs thick ovate-elliptic to lanceolate, rounded or subcordate at base, 4-8 cm lg, mostly sh'er than petiole; submerged lvs reduced to phylloides or bladeless petioles; peduncle as thick as st, 4-8 cm lg; spike dense, 4 cm lg; fr turgid, 4 mm lg, narly obovoid; nutlet pitted on the sides, 2-grooved on back.

P. NIAGARENSIS Tuckerm, Am J sc sr 2, 7:354. B 2:197.

P. PAUCIFLORUS Pursh, Fl 1:21. B 2:197. (Parish, 940 = var.)

P. TRICHOIDES C & S, Linnaea 2:175. Eu. (Bth 341 = pusillus fide B 2:198.)

P. ZOSTERACEUS Fries, Nov Fl Suec ed 2, 51. B 2:198.

P. ZOSTERAIFOLIUS Schum, En Pl Saell 1:50. B 2:197.

P. OBTUSIFOLIUS M & K, Deutch Fl 1:855. (Parish 940 = pauciflorus var. B 2:198. Da 17. Ab 11.)

POTAMOGETON PECTINATUS Linn.

Sts 3-1 m lg, slender, much branched, branches repeatedly forking; lvs setaceous, attenuate to apex, 1-nerved, oft capillary or nerveless, 2-10 cm lg; stipules half free, 1-2 cm lg, their sheaths scarious on margins; peduncles filiform, 4-10 cm lg; spike 1-4 cm lg; fls in whorls; fr obliquely obovoid, about 4 mm lg, with 2 obscure lateral ridges on back; sty straight or curved, facial: lvs submerged.

P. PERFOLIATUS L, sp pl 126. B 2: 197. Parry, Wyo 18.

P. PRAELONGUS Wulf, Roem Arch 3 (3):331. B 2:197. Eu.

P. PROTEUS C & S, Linnaea 2:196.

Variety **LUCENS** C & S, Linnaea 2:197. B 2:197 as sp.

L, sp pl 127. B 2:198.

P. ROBINSONII Oakes, Hovey Mag 7: 180. B 2:198.

P. EUPESCENS Schrad, in cham Adn ad Fl Berol 1815:4. B 2:195.



YUCCA GLORIOSA L.

TO THE
LIBRARY OF THE
CONGRESS



YUCCA FILIFERA

Genus **POTENTILLA** Linnaeus.

- L. syst ed 1 (1735). A 1:318 d.
POTENTILLA ACUMINATA Hall.
 A 1:71 fdr.
P. AMIGENS Greene, Er 5. Colo.
P. ANDERSONII P 1:104 based on *Horkelia parviflora* Nutt in T & G Fl.
P. ANSERINA L. sp pl 495. P 1:87
 Mig. Da 5. B 1:180. A 1:318 as
P. ARGUTA Pursh, Fl 2:636. Greene,
 Er 1:5. Ckl W 5:11.
 Variety **GLANDULOSA** ckl W 5:11
 (glandulosa Lindl).
P. ARIZONICA P 1:104 based on *Ivesia pinnatifida* Wat.
P. ASHLANDICA P 3:248.
P. BAILEYI P 1:105 based on *Ivesia* B.
 Baja mts! Nev.
P. BLASCHKEANA Turcz ex Lehm. B
 1:179 as gracilis.
P. BOLANDERI P 1:103 based on *Horkelia* B. Jepson, Er 1:10.
P. BREWERI Wat 8:555. B 1:178, 2:
 444.
POTENTILLA CALIFORNICA Greene.
 Baja (Or 840), distributed as *Horkelia californica paucifoliolata* Watson.
 P 1:100 based on *Horkelia* C. Da 5.
POTENTILLA CALLIDA Hall.
 Ha 86. A 1:71 fdr.
P. CAPITATA P 1:104 based on *Horkelia* c.
P. CILIATA P 1:103, Owen's valley.
 Inyo Co.
P. CLARKIANA K 7:93. Cur 1:136 as
 probably Grayi. B 2:444 as
POTENTILLA CLEVELANDI Greene.
 Hanson's (Or 905); Laguna mt, SD Co.
 (Cleveland).
 P 1:102. Ha 87. SD and Baja mts!
 (*Horkelia Clevelandi* Rydb, Torr cl b
 25:54.)
P. CONGESTA Baillon, Hist 1:369.
 (1869). P 1:104.
P. DAUCIFOLIA P 1:160. Klamath and
 Shasta valleys, Cal.
P. DECIPIENS P 1:106 based on *Ivesia*
pymaea G. = *nubigena* Greene.
P. DEPAUPERATA E. ex G 7:399. P
 1:105. B 1:184 as *Ivesia depauperata*.
P. DISSECTA Pursh, Fl 1:355. Parry,
 Wyo 14. B 1:179.
P. DIVERSIFOLIA Lehm, Rev 72 t 31.
 B 1:179 as *dissecta*. Wat, bot King 86.
P. DOUGLASII P 1:103 based on *Horkelia fusca*.
P. ELATA P 1:100. Jepson. Er 1:13.
 Type locality: shady banks of the
 upper Napa river, a little above Calis-
 toga, Cal.
P. FASTIGIATA Nutt, T & G Fl 1:440.
 B 1:179 as *gracilis* var: f.
P. FISSA Nutt. B 1:178 as *glandulosa*.
 Greene, Er 1:5. Mont. Id.
P. FLABELLOPOLIA Hook, T & G Fl
 1:442. B 1:180 as *gelida*.
P. FLABELLOPOEIS Lehm, Hook Fl
 1:192 t 66. B 1:179 as *gracilis* var: f.
P. FRODOSA P 1:300. Martinez, Cal.
P. FRUTICOSA L. sp pl 495. Parry,
 Wyo 5. B 1:180.
P. GELIDA C A Meyer, Verz Pfä Cauc
 167. Fu. B 1:180. Cal. Wash. Asia.
P. HANFMANI P 3:20.
P. LACTEA P 3:20.
P. MICHENERI Greene, Er 1:5. Mt Ta-
 malpais.

- P. PLATTENSIS** Nutt, T & G Fl 1:439.
 Variety ? **LEUCOPHYLLA** Greene,
 Er 1:5. Cal.
P. REFLEXA P 3:19.
P. SCOPULORUM Greene.
 "Sts only 1' hi, erect, from rather
 slender and profliferous horizontal rt-
 stocks; herbage hirsute-pubescent and
 somewhat glandular, but not heavy
 scented; lvs erect, of thinnish texture;
 lfts in about 5 pairs, the lowest very
 sm, all deeply incise-toothed; cymes
 contracted: cor nearly 1' in diam, pale
 y. Open pine woods of the Colorado
 Rocky mts, at middle elevations, and
 very com; by its horizontal and pro-
 liferous rtstocks so multiplying under-
 ground as to form broad masses. The
 fls are strikingly large and handsome."
 —Greene, Er, 1:4-5. NM.
P. VALIDA P 3:20.
POTENTILLA GLANDULOSA Lindl.
 Lindl, bot reg t 1583. B 1:178. Par 179.
 Greene, Er 1:5. Da 15. Er 2:36 Cat.
 Wash to SD Co! A 1:318 S. M 4:66.
 See *Drymocallis glandulosa*.
 Variety **NEVADENSIS** Wat. Ha 87.
 Rydb, Mon NA Pot 199 as *Drymocallis*
glandulosa variety *monticola*. A 1:318
 as same.
P. GORDONI P 1:106 based on *Horkelia* G.
P. GRACILIS Dougl. bot mag t 2984.
 Ha 87. B 1:179. (P. Blaschkeana.
 Turcz.)
 Variety **FASTIGIATA** Wat. (P. fasti-
 giata Nutt.) Ha 88.
 Variety **RIGIDA** Wat. (P. Nuttallii
 Lehm.) Ha 88.
P. GRAYI Wat 8:557. B 1:179, 2:444.
P. HOWELLI P 1:104. Ore.
P. KELLOGGII P 1:101 based on *Horkelia* K
 (Greene, Cal ac b 2:416, My
 1887).
P. KINCHII P 1:105 based on *Ivesia* K.
P. LACTEA P 3:20 (P. *glandulosa lactea*
 Greene, Fl Fr 65). Ha 88.
P. LAXIFLORA Drew.
 Sts decumbent or ascending, slender,
 a ft lg, loosely branching above; lfts
 10 or 12 pairs, 6" lg, irregularly lobed
 or cleft, the 2 or 3 divisions nar and
 acute inf loosely cymose; cx campanu-
 late, the triangular acute seg about
 equalling tube, bracteoles slender, sm'er
 than seg, the whole about 3" broad; pet
 w, unguiculate, exceeding the cx; sta
 10; fil w, petaloid-dilated, unequal; car-
 pels 2 or 3, nearly 2" lg, light brown,
 smooth and shining. Hy-Am-Pum Val-
 ley, among young pines, J1 25.—Drew.
 Torr cl b 16:151. Humboldt Co. Cal.
P. LEMMONI P 1:104 based on *Ivesia* L.
P. LINDLEYI P 1:101 based on *Horkelia*
cuneata (Lindl) bot reg 23 t 1997, 1837).
P. MILLEGRAEA E. B 1:178 as *rivalis*
 var: M. M 4:66.
P. MICHENERI Greene.
 "Sts only 6 or 8' hi, tufted from a
 strong tap-rt: lvs linear, 3or 4' lg,
 with about 15 pair of crowded but not
 imbricated sm lfts, these 5 to 7-parted
 into obl entire obtuse seg: younger
 lvs and rish sts somewhat villous;
 cyme terminal, contracted, or even com-
 pact when young; pet cuneate-obcordate,
 exceeding the ex. w: sta 10, all with
 obl-petaloid w fil, the alt ones sm'er.

Southern flanks of Mt. Tamalapais, 1 Je 1892. C. G. Michener."—Greene, Er 1:5-6.

P. MUIRII P 1:106 based on Ivesia M.

POTENTILLA MULTIJUGA Lehm. Rev 29 t 7. B 1:181 as probably Horkelia California. Ab 198. A 1:318 d. **P. NEWBERRYI** G 6:532. P 1:105. B 1:184.

Synonymy: Ivesia gracilis T & G, Pac Ry R 6:72 t 11 (1857). B 1:182.

P. RUBIGENA Greene, Er 3:36 based on P. decipiens P 1:1106 (1887). —not of Jordan.

P. NUTTALLII Lehm Rev 89 t 33. B 1:179 as gracilis var: rigida. M 4:66.

P. PALUSTRIS Scop, Fl Carn ed 2, 1:359. B 1:180. 2:444.

P. PARRYI P 1:102 based on Horkelia P.

P. PENNSYLVANICA L, Mant 1:76. Greene, Er 1:5.

P. PICKERINGII P 1:105 based on Ivesia P.

P. PLATTENSIS Nutt, T & G Fl 1:439. (1840). B 1:179. Greene, Er 1:5.

Type locality: "Plains of the Platte."

Variety (?) **LEUCOPHYLLA** Greene.

"Lowest lvs nearly, as in type, tho more pubescent, the succeeding and somewhat larger ones, w with a dense and fine silky tomentum which extends in a degree to floral lvs and ex. Independence Lake, in the Sierra Nevada. Calif., 26 Je 1892, C. F. Sonne."—Greene, Er 1:5.

POTENTILLA PUBERULA Greene.

P 1:102. Da 5, LA Co.

Type locality: Mesas 5 miles west of Sber (S. B. Parish 279).

P. PURPUREASCENS P 1:105 based on Horkelia p.

P. RIGIDA Nutt, T & G Fl 1:440. B 1:179 as gracilis var: r.

POTENTILLA RIVALIS Nuttall.

T & G, Fl 1:437. B 1:178.

Variety **MILLEGRANA** S. Watson.

Baja (Or 92); Sierra Nevada; Mo.

P. SANTOLINOIDES P 1:106 based on Ivesia S.

POTENTILLA SAXOSA Lemmon.

P 1:171. A 1:39 fdr.

P. SERICATA P 1:104 based on Horkelia S.

P. STENOLOBA Greene, Er 3:36 based on tenuiloba Greene (Not Jordan).

P. TENUILOBA P 1:105 based on Horkelia tenuiloba G. = stenoloba.

P. TILINGI P 1:105 based on Horkelia T.

P. UNGUICULATA P 1:105 based on Ivesia u.

P. UTAHENSIS P 1:162 based on Ivesia U.

P. WEBBERIA P 1:105 based on Ivesia W.

P. WHEELERI Wat 11:148. B 1:179. 2:444.

P. WRANGELIANA Fisch & Ave-Lall. Ind sem Hort Petrop 7:54. B 1:178 as glandulosa.

POTERIDIUM Spach.

P. ANNUUM Spach. Parish, Er 6:88 Cuyamaca. B 1:186 as Poterium a.

POTTIA Ehrh.

P. CAVIFOLIA Ehrh. B 2:361.

P. BEHMII Bruch & Schimp. B 2:361.

P. MINUTULA Bruch & Schimp. B 2:361.

P. RUBIGINOSA (Barbula r, Mitten). B 2:362.

P. STARKEANA Muell. B 2:362.

P. SUBSESSILIS Bruch & Schimp. B 2:361.

P. TRUNCATA Bruch & Schimp. B 2:361.

Variety **SUBCYLINDRICA** Bruch & Schimp. B 2:361.

PRENANTHES Vaill, ex L, Gen ed 1, 235 (1737).

P. MAINENSIS G Syn Fl 1 (2):433. M 1:8 as Nabalus M.

P. STRICTA P 2:21.

"Per, 2° hi from sim or brg horizontal rt-stocks, glab, bright g, not glau: radicle lvs 6-10' lg, oblg-lanceolate, tapering to a winged petiole, abruptly acuminate, coarsely and repandly dentate; cauline similar but sm'er, rather num: infli a strict and dense sim raceme 6' lg; hds erect, their sh pedicels single or in pairs; scales of the cylindrical inv about 8, p'ish and with some w tomentose pubescence, calyculat bracts obscure or 0: ak equally and obscurely 15-ribbed; pap pale fuscous. Dry northward slopes, in rocky soil, at about the limit of trees on Mt Rainier, 20 Ag 1889."—P 2:21.

P. TENUIFOLIA T, NY Lyc ann 2:210. B 1:428 as Stephanomeria minor.

FRIMULA L, syst ed 1 (1735).

P. MACOUNII P 3:251, 260.

P. EXIMIA P 3:251.

P. MUCRONATA P 3:251.

P. ANGUSTIFOLIA T, NY Lyc ann 1:34 t 3 f 3. Ckl W 6:11.

P. FARINOSA L, sp pl 143. Ckl W 6:11.

P. NIVALIS Pall, Reese 3:723. P 3:261.

P. PARRYI G, Am J sc sr 2, 34:257.

Parry, Wyo 7. Ckl W 6:11. P 3:251, 252.

P. SUPPRAESCENS G 7:371. B 1:468. Par 256 t.

PRIONOPSIS Nutt, Am Phil sc tr, ns, 7:329 (1841). = Aplopappus fide IK.

P. CHAPMANII T & G Fl 2:215. P 3:49 S. = Aster eryngiifolius fide IK.

P. CILIATA Nutt, lc. P 3:45. = Aster c fide IK.

PRITCHARDIA Seem & H Wendl in Bonplandia 9:260 (1861); 10:197.

P. FILAMENTOSA Wendl, bot zeit 34:807. B 2:211 as Washingtonia filifera.

P. FILIFERA Linden, Ill Hort 24:32, 105 (1877).

PROSARTES D Don, L sc pr 1:48 (1839); L sc tr 18:531 (1841). = Disporum fide IK.

P. HOOKERI T, Pac Ry R 4:144. B 2:179. = D: H. fide IK.

P. LANUGINOSA D Don. = D: l fide IK. P 2:179 S.

P. MENZIESII D Don. = D: M fide IK. B 2:178. Par 383.

P. OREGANA Wat 14:271. P 2:179.

P. PAEVIPODIA Wat, B 2:179.

P. TRACHYANDRA T, Pac Ry R 4:144. P 2:179. = D: lanuginosum fide IK.

P. TRACHYCARPA Wat, bot king 344. B 2:179. Br, Colo 228. = D: t fide IK.

Genus PROSOPIS Linnaeus.

Mant 1:10 (1767). A 1:314 d.

P. CINERASCENS G ex Bth L sc tr 30:381. B 1:163.

P. EMORYI T, Emory's Rec 139. B 1:163 as pubescens.

P. GLANDULOSA T, NY Lyc ann 2:192. B 1:163 as juliflora.

PROSOPIS JULIFLOEA DC.

Abrams, Fl LA 205. SBER; CD.

DC, Prodr 2:447 (1825).

Type locality: "in siccissimis campis Jamalcae."

Mimosa piliflora Swartz, Fl Ind Occ 2:986 (1800). Typographical error for juliflora fide Bentham.)

B 1:163. A 1:97 d, 314 d.

P. ODORATA T, Frem r 313 t 1. B 1:163 as pubescens.

P. PUBESCENS Bth, Hook J bot 5:82 (1846). B 1:163. Ab 206. A 1:98 d, 345 d. M 4:61.

Genus PRUNUS Tournefort.

L. syst ed 1 (1735). A 1:317 d.

P. ANDERSONII G 7:337. B 1:168. M 3:125 as Emplectocladus A.

PRUNUS DEMISSA Walp.

Choke cherry. Mts SD Co to the Columbia river. Rocky Mts.

Abrams, Fl LA 204. SBER mts.

Cerasus demissa Nuttall, T & G Fl 1:411.—Watson, bot King Exp 80.

Prunus Virginiana var demissa Torrey, bot Wilkes 284.—Gray Am ac pr 8:381.

Dietr, Syn Pl 3:43. B 1:167, 2:443. Da 5. A 1:317 d. =virginiana fide IK. Ha 88. Par 36.

PRUNUS EMARGINATUS Walp.

Rep 2:9. B 1:167. 2:442. Z 1:151. Ha 88. Cerasus Californica Greene, Fl Fr 50 (1891). Red cherry.

Variety MOLLIS Brewer.

S. Cal. (Parish 1814) to Oregon. Ha 88. Parish, Z 4:342.

PRUNUS FASCICULATA A. Gray.

CD (Parish 1167); Utah; Arizona.

G 10:70. B 1:168.

PRUNUS FREMONTI S. Watson.

B 2:442. SBER (W. G. Wright).

CD (Parish 723); Santa Tomas, Baja! (Or).

PRUNUS ILICIFOLIA Walp.

Rep 2:10. B 1:168. 2:443. Ab 204. Da 5. Z 1:135, 151. A 1:98 d, 317 d. Par 63. Br, Br. Z 1:111 Cat.

Cerasus ilicifolius Nuttall, Sylva 2:16 t 47.—H & A, bot Beechey 340 t 83.

Variety OCCIDENTALIS Br 1:209 Rosa; Cruz; Santa Inez mts near SBar; SF (diam of more than 2"); based on occidentalis Lyon.

P. MOLLIS Walp, Rep 2:9. B 1:167 as emarginata var: m.

P. OCCIDENTALIS Nutt. Lyon, bot gaz 11:202, 333. Br, Z 1:111 as ilicifolius. Z 1:151 S.

Greene, Cal ac b 2:395 (28 My 1887):—"Tree 15-25' hi, with compact and well rounded hd, the trunk with rough dark bark; evergreen; lvs usually ovate-acuminate, 3-4' lg, 2-2½' broad, entire, or remotely denticulate, rarely lanceolate-acuminate 3' lg and ¾' broad, sometimes broadly ovate and abruptly acute, the margin spinose-serrate; infl racemose; drupe orbicular, slightly compressed laterally, ¾' in length and breadth, with a very conspicuous suture on one side, dark r-p, the thin pulp sweet, with also a bitter-

almond flavor, but no acidity or astringency: putamen thin, rather firm-cartilaginous than ligneous. Very common on all parts of Santa Cruz Island; only occasionally exhibiting the very nar lvs which I have described: the spinose-serrate foliage mostly appertaining to young trees * * *

P. OREGANA P 3:21.

P. SEROTINA Ehrh, Beth 3:20. B 1:167.

P. SUBCORDATA Bth 308. B 1:167. Par 34. M 3:75.

Variety KELLOGGII Lemmon.

"Usually 6-12° hi, the young shrubs with ascending brs, the older flat-topped: foliage nearly glab, orbicular or elliptical, not at all cordate, at base, crenulate-serrulate, about 1½' lg, the slender petioles about ½', the 2-4 glands either at summit of these or upon the base of the lamina: fr 1' lg, or more, ovate, y when ripe, the sarcocarp more pulpy and better flavored than in the type. **abundant near Sierra City, Sierra Co, Cal."—P 2:67.

P. VIRGINIANA L, sp pl 473.

Variety DEMISSA T, bot Wilkes 284. A 1:317 as sp. G 8:381.

Genus PSATHYROTES A. Gray.

Pl Wright 2:100 t 13.

P. ANNUA G, lc, B 1:409.

PSATHYROTES RAMOSISSIMUS A. G.

G 7:363. B 1:409.

Mohave; CD; Arizona.

P. SCHOTTII G 9:206. =Peucecephalus S fide IK. B 1:409.

Genus PSEUDOTSUGA Carriere.

False spruce. Evergreen trees with flat petioled lvs, appearing 2-ranked by a twist of the petiole, leaving an oval scar on the smooth branches: stam cones oblong or cylindric, partly enclosed by conspicuous orbicular bud-scales, scales ending in a short spur; anth 2, obliquely splitting: pist cones with scales much sh'er than the broadly liner acutely 2-lobed and lg-pointed aristulate bracts, maturing the first year: sds without resinous-resides, wing at last breaking off: cotyledons 6-12.

PSEUDOTSUGA DOUGLASII Carr.

Da 17. B 2:120, 483. A 1:341.

See Pseudotsuga taxifolia.

PSEUDOTSUGA MACROCARPA Lem.

Ab 6. Lemmon, Er 1:49, 50, SBER mts. Ha 54. Cuyamaca!

Big-cone Spruce. Tree 12-18 m hi, rarely 1 m in diam, branches spreading; lvs rather narrow, acutish; stam cones about 2 cm lg; frg cones 12-18 cm lg, 5-6 cm thick; scales large, rather thick; bracts somewhat exceeding the scales; sds including wing about 10 mm lg; cotyledons 9-12.

Rather common in all our mts except Monica. Ranging mostly from 2000-5000' alt, being confined for the most part to canyons and north slopes in the upper portions of the chaparral belt and extending into the pine belt.

PSACALUM Cass, Dict sc nat 43:461 (1826). =Senecio fide IK.

P. STRICTUM P 3:291 S.

P. TAXIFOLIA Britton, NY ac tr 8:14. Lemmon, Er 1:48, 49, 50. A 1:341 d. M 4:79.

Variety **ELONGATA** Lemmon.

"Another marked variety of Douglas spruce with comparatively thin, whitish (outside), shallow-furrowed bark, and conspicuous lg; nar, y'ish shining cones, $3\frac{1}{2}$ -4 $\frac{1}{2}$ ' lg and one-fifth as thick, with comparatively sh-bracts and thin, soft scales, inhabits the great forest around the base of Mt. Hood, Oregon."—Lemmon. Er 1:49.

Variety **SUBEROSA** Lemmon.

"Sm trees with w'ish, thick, corky bark, thin foliage and sm ovate cones 1-2' lg, with convex, at length firm scales, comparatively sh, slightly exerted, nar bracts and sm sds. On hi exposed slopes, also in secluded ravines, 7000-8000' alt of principal mts of northern Ari and NM."—Lemmon, Er 1:48.

PSILACTIS COULTERI A. Gray.

Mohave (Parish); Arizona; Mexico.

PSILOCARPHUS Nutt. A 1:188 d.

P. BREVISSIMUS Nutt. Am phil sc tr, ns, 7:340. B 1:336 as Oregonus.

P. CAULESCENS Bth 319. B 1:337 as Evax c.

P. GLOBIFERUS Nutt exc syn. Ab 408. A 1:88 d. B 1:336 as Oregonus.

PSILOCARPHUS OREGONUS Nutt. Am phil sc tr, ns, 7:341. B 1:336. (not G 8:390.)

SD! L A; Oregon Idaho.

Variety **ELATIOR** G. B 1:336. SBar to Ore.

PSILOCARPHUS TENELLUS Nutt.

Am phil sc tr ns, 7:341. B 1:336.

Washington to Baja! Common.

PSILOCHENIA Nutt. Am phil sc tr, ns, 7:437. = *Crepis* fide IK.

P. OCCIDENTALIS Nutt. lc. B 1:435 as C: o.

PSILOSTROPHE DC 7:261 (1838). = *Riddellia* Nutt fide IK.

P. GNAPHALODES DC lc. = R: *arachnoidea* fide IK.

Genus **PSORALEA** Linnaeus.

Gen ed 2, 358 (1742). A 1:309 d.

PSORALEA CALIFORNICA S. Watson. Wat 12:251. B 2:441: A 1:309 d.

Coville, CNH 4:84. Near Kernville.

Abrams, FI LA 221. SBar mts.

Leaflets 5-7: silky-gray.

P. CASTOREA Wat 14:291. SBar deserts (Parish 1283). Nev.

Type locality: "near Beaver City, S. Utah, on sandy ridges."

P. FLORIBUNDA Nutt, T & G Fl 1:300. B 1:140. = *tenuiflora* fide IK.

P. FRUTICOSA K 7:91. Cur 1:155 as *bracteata* L. B 2:441. Cape of Good Hope.

P. LANCEOLATA Pursh Fl 2:475. B 1:140.

PSORALEA MACROSTACHYA D. C. DC 2:220. B 1:140. 2:441. Ab 220. Da 5. A 1:309 d.

Lindley, bot reg t 1769.

T & G, Fl 1:689.

Throughout Cal; Baja!

Psoralea strobilina var T & G, Fl 1:689.

PSORALEA ORBICULARIS Lindl.

Lindl, bot reg t 1971. B 1:139. Ab 221. Da 5. A 1:309 d. Bolinas bay, Cal to Baja.

St prostrate, creeping, lvs and racemes erect, lg-stalked: lfts 2.5-4 cm lg,

terminal one nearly orbicular, lateral pair obovate: raceme oft 2 dm lg: bracts larger, decid: ex villous, pedicellate-glandular, cleft nearly to base, lower tooth equalling p cor: sta diadelphous: pod ovate, acute, 6 mm lg.

Peduncles 1-2 ft. long: leaflets 3, orbicular.

PSORALEA PHYSODES Douglas.

Ab 220. Da 5. B 1:140. A 1:309 d.

Torrey & Gray, Fl 1:304.

Hooker, Fl 1:136.

PSORALEA RIGIDA Parish.

A 1:73 fdr.

P. STROBILINA H & A, bot Beech 332.

B 1:139. (Var. T & G Fl 1:689 = *macrostachys* fide B 1:140.)

Genus **PTELEA** Linnaeus.

Shrubs or sm trees: lvs pinnately trifoliate, with sessile lfts: fls sm polygamous, g'ish w, in axy paniculate cymes: sep, pet, and sta 4 or 5: ova with a sh thick stipe, 2-celled; cells 2-ovuled, lower ovule abortive; sty sh; stig 2: fr a 2-celled, 2-seeded samara, winged (or not winged) all around, broadly orbicular: sds oblg.

L, syst ed 1 (1735).

P. ANGUETIFOLIA Bth 9. B 1:97, 2: 438. A 1:134 in part as *crenulata*.

PTELEA APTERA Parry.

Da ac pr 4:39. A 1:143, 144 d. Sargent, G & F 3:332 f.

A densely-branched shrub, forming clumps 5-15' hi, with sts 1-2' in diam; young, growing shoots, with r'ish-brown bark, thickly beset with pustular glands; lvs trifoliate, lfts $\frac{1}{2}$ - $\frac{3}{4}$ ' lg, ovate to subrhombic, obscurely crenate, densely pubescent when young, with distinct marginal veins, and pellucid punctate with larger and sm'er glands; infl terminal in scant corymbs, or in depauperate specimens single-fl'd; fls apparently all perfect in 4 or 5 divisions, ex sh; pedicels, sep, and outer surface of cor pubescent; sta one-third sh'er than pet, fl smooth, widening toward the base, disc of ova conspicuous, stig sessile, fr broadly ovate, lenticular, wingless, more or less carinate, 3-6" lg, $\frac{3}{4}$ " broad, bluntly marginate at base, and tipped with the persistent stigs, 2-celled, or occasionally 3—in the latter case bluntly triangular—externally covered with pustular glands, sds oblg, corrugated, blk when mature, occasionally both ovules developed in one of the cells; unfertilized fls decid, as a whole."—Parry, Dav ac pr 4:39. Todos Santos bay, Baja.

Type locality: Punta Banda, Baja!

P. BREVISTYLIS Greene. A 1:145 fdr.

P. BULLATA Greene. A 1:135 fdr.

P. CINNAMOMEA Greene. A 1:133 fdr.

P. CRENULATA P 1:216. A 1:134 fdr.

P. CYCLOLOMA Greene. A 1:136 fdr.

P. NUCIFERA Greene. A 1:143 fdr, as aptera.

P. OBSCURA Greene. A 1:142 fdr, as aptera.

P. OVALIFOLIA Greene. A 1:132 fdr.

Genus **PTERIDIUM** Scop.

PTERIDIUM AQUILINUM Kuhn.

Pteris aquilina L, sp Pl 106 (1753).

United States.

Genus **PTEROSTEGIA** F. & M.

PTEROSTEGIA DRYMARIOIDES Nutt.
Abrams, Fl LA 111. Common and
general below 4000 feet. The whole
plant often reddish when growing in
exposed places.

Hall U 76.
Coville, CNH 4:191. Panamint mts.
Fisch & Mey, Ind Sem Petrop 2:48
(1835).

Type locality: "in portu Bodega
novae Californiae."

Cruz; Rosa; Guad; Quintin; SD! Ha U
Genus **PUGIOPAPPUS** A. Gray.

Genus **PTEROSPORA** Nuttall.

PTEROSPORA ANDROMEDEA Nutt.

Genus **PTILORIA** Rafinesque.

PTILORIA CICHORIAEACEA Greene.

PTILORIA EXIGUA Greene.

PTILORIA MYELOCLADA Greene.

Greene, Cattonia 2:130.

PTILORIA PANICULATA Greene.

PTILORIA PARRYI Orcutt.

PTILORIA PAUCIFLORA Raf.

PTILORIA PENTACHAETA Greene.

PTILORIA PLEUROCARPA Greene.

Abrams, Fl LA 446. Common about
Pasadena and Sber.

PTILORIA VIRGATA Greene.

PYRROCOMA GOSSYPINA Greene.

Genus **PURSHIA** De Candolle.

PURSHIA TRIDENTATA DC

Genus **RYCNANTHEMUM** Michx.

RYCNANTHEMUM CALIFORNICUM T.

Baja! San Bernardino; Nevada.

Genus **PYROLA** Tournefort.

PYROLA APHYLLA Smith.

Ha U 100. Puget Sound to Cuyamaca!

PYROLA PICTA Smith.

Leaves thick, coriaceous, pale, some-
times purplish below; commonly blotched
with white, ovate to obovate and lanceo-
late-oblong, on short petioles, 1-2 in. long.

QUAMASSIA Cov. Rafin. Fl Tellur 2:25

QUAMASSIA Rafin. Am mo mag 1818: 265

=Camassia fide IK.

Q. ESCULENTA Rafin lc. =C; e, fide IK.

Q. SCILLOIDES Rafin Cat 15. =C; escu-

lenta fide IK.

QUAMOCOLIDION Cholsy in DC 13 (2):

429 (1849). =Mirabilis fide IK.

Q. MULTIFLORUM T, ex G, Am J sc 2,

15:321. B 2:2 as M: m.

QUERCUS L, syst ed 1 (1735). A 1:

336 d.

Q. ACROGLANDIS K 1:25. Cur 1:146 as

Agrifolia.

Q. ACUTIDENS T, Mex bound 207 t 51.

B 2:96 as dumosa, "a large leaved form."

Q. AGRIFOLIA Liebm. Dansk Vidensk

Förhandl 1854, 173. Greene, Cal ac b 2:

Cruz. Br 1:217 Rosa. Da 16. B 2:98. Ab

106. A 1:96 d, 336 d.

Hall U 92.

Q. ALBA L, sp pl 996.

Variety? **GUNNISONI** T. A 1:338 as un-

undulata.

Q. BERBERIDIFOLIA Liebm. B 2:96 as

dumosa.

Q. BREWERI E, B 2:96. = Garryana fide

IK.

Q. CALIFORNICUS Cooper, Smith r

1858:261. Ab 106. A 1:336d. = Kelloggii

fide IK.

Q. CHRYSOLEPIS Liebm, lc, 1854, 173.

Da 16. B 2:97. Ab 106. Greene, Cal ac
b 2:412 Cruz. A 1:336 d.

Q. CRASSIPOCULA T, Pac Ry R 4:137;
5:365. B 2:97 s. A 1:337 as Chryso-
lepis.

Q. DENSIFLORA H & A. bot Beech 391.
B 2:99.

Q. DOUGLASHI H & A bot Beech 391.

Ab 105. B 2:95. A 1:337 d. M 3:31.

Variety **NEOMEXICANA** A 1:338 as
undulata.

QUERCUS DUMOSA Nutt.

Syl 1:7. Greene, Cal ac b 2:412 Cruz.

r 1:216 Rosa. Da 16. B 2:96. Ho 72.

Ab 105. Cov 197. M 3:131.

Type locality: "over the base of the

hills which flank the village of SBar.

Variety **BULLATA** E, B 2:96. Er 1:12.

Q. DUNNII K, Pacific Rural Press 7 Jc

1879. Cur 1:146. =Palmeri.

Q. ECHINACEA T, Pac Ry R 4:167 t

19. B 2:99 as densiflora.

QUERCUS EMORYI Torr.

Emory's rec 151 t 9. B 2:94.

Q. ENGELMANNI Greene. Ab 105. Mc-

Clatchie, Er 2:123 Pasadena. Z 1:145,

157. A 1:337 fdr., 366d.

Q. FENDLERI Liebm. A 1:338 as un-

undulata.

Q. FULVESCENS K 1:71 Cur 1:146 et A

1:337 as chrysolepis.

Q. GAMBELLI Nutt. Phil ac J, ns,

1:179. A 1:338 as undulata.

Q. GARRYANA Dougl ex Hook Fl 2:

159. B 2:95.

Q. HINDEI Bth, bot Sulph 55. A 1:

338 as lobata.

QUERCUS KELLOGGII Newb.

Pac Ry R 6, bot 28, 89 f 6. B 2:99. Da

16. A 1:336 s. M 3:4.

See *Quercus Californica* Cooper.

Q. LOBATA Nees, Anal clenc nat 3:277.

B 2:95. Da 16. Ab 105. Br 1:204 Cruz;

216 Rosa. A 1:338 d.

Q. MACDONALDI Greene. Z 1:145, 157

S. M 3:131.

Variety **ELEGANTULA** Greene. Z 1:

145 S.

Q. MOREHUS K 2:36. Cur 1:146 et A

1:339 as a hybrid (Wislizeni x Kel-

loggii). M 3:4. 131. G & F 5:72. Greene,

W Am Oaks 79. Sargent, Syl 8:119.

Q. NEERI Liebm. B 2:95 as Garryana.

Q. OBLONGIFOLIA T, Sitg r 173, t 19,

B 2:96, 97 s. Da 16.

Q. OBTUSILOBA Michx. Hist Chenes

Am t 1.

Variety **DEPRESSA** Nutt.

Variety **Utahensis** DC. A 1:338 as un-

undulata.

Q. OXYADRENIA T, Stig r 172 t 17.

A 1:336 as agrifolia.

QUERCUS PALMERI Engelm.

St Louis ac tr 3:393. B 2:97.

Q. PARVULA P 1:40. Greene. Cal ac b

2:412. A 1:338 fdr. Z 1:145 as Wisli-

zeni, 156 as same.

Type locality: "northward slope of

Cruz;" forming low clumps, chiefly

along the borders of the pine woods;

not frequent, but a clear new species."

QUERCUS PUNGENS Engelm.

B 2:96 as undulata var: p. = grisea

fide IK.

Q. SADLERIANA R Br. M 3:130, Cal,

Ore.

Q. RANSOMI K 1:25. Cur 1:146 as

Douglasii. A 1:338 as lobata fide. B 2: 95. Z 1:156 as Douglasii.

Q. RUBRA Bth 337. A 1:336 as Californica.

Q. SONOMENSIS Bth, DC 16 (2):62. A 1:336 as Californica. = Kelloggii fide IK.

Q. TINCTORIA Bartr Trav ed 2, (1794) 37.

Variety **CALIFORNICA** T, Pac Ry R 4: 138. A 1:336 as sp. B 2:99 as Kelloggii.

Q. TOMENTELLA E, St Louis ac tr 3: 393. Br 1:217 Rosa; "larger than on Cruz." Greene, Cal ac b 2:412; "frequent, the trees smaller than on Guad." B 2:97.

Q. TURBINELLA Greene. A 1:337 fdr. **Q. UNDULATA** Bth 81. A 1:338 d. B 2:96.

Variety **PUNGENS** E, B 2:96.

Q. VACCINIFOLIA K 1:96. Cur 1:146. Z 1:157 as chrysolepis. B 2:97 as

Q. WISLIZENI DC 16 (2) 67. M 3:3. Ab 106. B 2:98. Er 1:12. A 1:338 d.

Genus **RAFINESQUIA** Nuttall.

See *Nemoseris Rafinesque*.

RAFINESQUIA CALIFORNICA Nutt.

Am phil sc tr 7:429. Greene, Cal ac b 2:405. Cruz. Da 10. B 1:430. Ab 130. Br Z 1:114 Cat. A 1:251 as *Nemoseris* Cal.

RAFINESQUIA NEO-MEXICANA A. G. G, Pl Wright 2:103.—P 1:281. P 1:291, San Bartolome bay, Baja. B 1:430. A 1: 289 as *Nemoseris Neo-Mex.*

CD; (Parish); Baja; Utah; N. M.

RAILLARDELLA ARGENTEA A. Gray. SBer mts to Lassen Co.

RAMONA P 2:235 (type *Audibertia polystachya*). —A 1:131 d.

E. CAPITATA Briquet. A 1:131.

E. CLEVELANDI Briquet. A 1:131 d.

E. GRANDIFLORA Briquet. A 1:131 d. —Ab 344.

Synonymy: *Audibertia grandiflora* Benth. *Salvia spathacea* Greene.

E. HUMILIS Greene, Er 1:44, based on *Audibertia humilis* Benth. —A 1:132 d.

Synonymy: *Salvia sonomensis*. P 2: 236.

RAMONA NIVEA Briquet.

A 1:276 d.

Audibertia nivea Benth.

RAMONA PACEYSTACHYA.

Heller, M 1:59.—A 1:276, 304 d.

Based on *Audibertia incana* var *pachystachya* G, Syn Fl 2, pt I, ed 2, 461 (1886).

Salvia carnosa var *compacta* Hall, U 111.

Audibertia pachystachya Parish, *Erythraea* 6:91 (1898).

RAMONA PALMERI Briquet.

A 1:276 d.

Audibertia Palmeri Asa Gray.

Type locality: Near Tighes ranch in the mts northeast of SD.

RAMONA POLYSTACHYA Greene.

Greene, Pitt 2:235, based on *Audibertia polystachya* Benth.

A 1:224, 345 d. Ab 345. M 3:144 as *Salvia aplana*.

White sage; valuable for bee pasturage; Santa Barbara to Baja!

RAMONA STACHYOIDES Briquet.

Ab 345. A 1:276 d.

RAMONA VASEYI Heller.

M 1:59 (22 F 1904).—A 1:276. M 3:126 as *Salvia* V.

Heller, *Muhlenbergia* 1:59 (22F1904), based on *Audibertia Vaseyi* Porter, Bot Gaz 6:207 (1881).

Type from Mountain Springs, SD Co (G. R. Vasey, 1880).

Genus **RAZOUMOFSKYA** Hoffman.

Plants y or g'ish-brown, with fragile jointed angled sts: lvs reduced to opp connate scales; fls solitary or several from same axil: stam fls mostly 3-parted, compressed; anth sessile on the lobes, circular, 1-celled, dehiscent at base by a circular slit; pollen grains spinulose; pist fls ovate, compressed, 2-toothed, subsessile, at length exerted on reflexed pedicels: berry fleshy, compressed, dehiscing elastically at the circumscissile base: cotyledons very sh. = *Arceuthobium* Bieb.

RAZOUMOFSKYA OCCIDENTALIS

OK.

Sts much branched, 5-15 cm lg, 3-5 mm thick; stam plants brownish-y, bearing num dense spikes, many-fld; ex-lobes 3-4 mm lg, lanceolate, acuminate; pist plants olive-brown; spikes sh, 5-6 fld or with upper reduced to 1; berry brown, obliq, tapering to each end, 4-5 mm lg.

Ab 110, frequent on pines.

Arceuthobium occidentale E

RACOPILUM. (Moss.)

R. ANOMALUM Schwaeger, Suppl t 278.

B 2:406 as *Hookeria* a.

RAINTREEA P 3:291.

R. STRICTA P 3:291.

RAILLARDELLA Bth, B & H gen 2: 442 (1876).

Heller, *Muhlenbergia* 1:59 (22 F 1904). B 1:417.

R. EISENI K ex G Syn Fl 1 (2): 33 = *scaposa* fide IK.

R. MUIRII G, B 1:618. M 3:78.

R. FRINGLEI Greene, T cl b 9:17, Cal.

R. SCAPOSA G, B 1:417.

RAINFALUS K 7:113 = *Herpestis* fide IK.

R. EISENI K 7:113. Cur 1:145 as H: *rotundifolia*. B 2:774 S.

RANUNCULUS L, syst ed 1 (1735). A 1:149 d.

R. ACRIFORMIS G 21:374. P 2:58 Wyo; 4:16.

R. ACRIS L, sp pl 554. Eu, Asia (Var, T & G Fl 1:21 = *Californicus* fide B 1:8.)

R. ALISMELLUS P 4:143.

R. ALISMAEFOLIS Gyr, ex Bth 295. B 1:6. 2:426. A 1:149.

Variety **ALISMELLUS** G. A 1:149.

R. AMBIGENS Wat, bib ind 16 (P 2:61 as *obtusiusculus*).

R. ANDERSONII G 7:327. B 1:6.

R. APRIGUS P 4:145.

R. AQUATILIS L, sp pl 556 in pt. B 1: 5, 2:425. A 1:149.

Variety **BLANKINSHIPII** M 1:40.

Variety **CAESPITOSUS** DC A 1:149 d.

Variety **HISPIDULUS** Drew. A 1:149 fdr.

Variety **TRICHOPHYLLUS** G. Da 1. A 1:149 d.

R. ARIZONICUS Lemmon ex G 21:370. P 2:60 is *subsagittatus subaffinis* (P 2: 110.)

Variety **SUBSAGITTATUS** G 21:370.

- P 2:59 as sp.
B. ARNOGLOSSUS P 4:143.
B. BLOOMERI Wat. B 2:426.
B. BOLANDERI Greene. A 1:149 s, 150 s.
B. BONGARDI Greene. A 1:150. P 4:16.
 Variety **DOUGLASII** Davis. A 1:150.
B. BREVICAULIS Hook Fl 1:13 t 7 f (A 1833). P 2:61 as ovalis Raf.
B. CAESPITOSUS DC A 1:149 as aquatilis var.
B. CALIFORNICUS Bth 295. B 1:7, 2: 426. Da 1. Z 1:131. Br 1:206 Rosa. Par 114. Ab 155. A 1:150 d. M 3:69.
 Variety **CANESCENS** Greene. M 3:74.
 Variety **CANUS** Wat. A 1:150 s.
 Variety **LATILOBUS** G. A 1:150 d.
B. CANUS Bth 294. Da 1. A 1:150. B 1:3 s.
B. CARDIOPHYLLUS P 4:144.
B. CARICETORUM P 5:194.
B. CHILENSIS DC, syst 1:286. B 1:9.
B. CYMBALARIA Pursh. Fl 2:392. B 1: 7. Da 1. A 1:150 = Oxygraphis c.
B. DELPHINIFOLIUS Fries ex Steud Nom ed 2:432. = polyanthemoides fide IK. (T & G Fl 1:659 = Californicus fide IK et B 1:8.)
B. DEPPEI Nutt. T & G Fl 1:21. Greene. Cal ac b 2:388 Cruz. P 1:85 Mig. A 1: 150 s. Z 1:131 s. = Californicus Bth.
B. EARLEI P 4:15.
B. DISSECTUS H & A. B 1:8 s. A 1: 150 s.
B. EISENII K 7:115. Cur 1:130 as "probably Nelsonii var. tenellus G."
B. ELLIPTICUS P 3:92.
B. FREMOGENES P 4:144.
B. ECHSCHOLTZII Schlecht. Animad Ran 2:16 t 1. P 4:15. A 1:150. = nivalis fide IK.
B. FASCICULARIS Muhl. P 4:144. 145. B 1:9 = Californicus as to Cal plant. M 4:71.
B. FLAMMULA L. sp pl 548.
 Variety **REPTANS** E. Meyer. B 1:6. A 1:150.
B. GLABERRIMUS Hook, Fl 1:12. B 1: 7. 2:426.
B. GORMANI P 3:91.
B. HEBECARPUS H & A, bot Beech 316. B 1:8. 2:426. Ab 155. A 1:150 d.
 Variety **FUSILLUS** Wat. M 3:98. Da 1. A 1:151 d. Greene, T cl b 14:16.
B. HEDERACEUS L. sp pl 556. B 1:5, 2:425.
B. HISPIDUS P 4:145.
B. HYDROCHARIS Spenn. Fl Friburg 3:1007. B 1:5 (Var: as hederaceus et aquatilis vars.)
B. HYDROCHAROIDES G. Am ac mem ns, 5: 306. A 1:151. M 4:80.
B. HYSTECULUS G 7:328. B 1:6. 2:425. = Kumlienlia hystericula.
B. INAMONENSIS P 3:91.
B. JUNIPERINUS M 1:144 s.
B. LACUSTRIS Beck & Tracey. P 2:62.
B. LAXICAULIS, Darby. S Flora 204 (1855). P 2:61 as obtusiusculus Raf.
B. LEMMONI G 10:68. B 1:7.
B. LIMOSA x **SCLEPERATUS** P 2:65.
B. LIMOSUS Nutt. T & G Fl 1:20. P 2: 64.
B. LUDOVICIANUS Greene. A 1:150 s.
B. MACRANTHUS Scheele, Linnaea 21:585. B 1:8. Mex. Tex.
B. MULTIFIDUS Bigelow, Fl Bost. ed 2, 228 (1824). B 2:426. P 2:62 as lacustris.
B. MURICATUS L. sp pl 555. Eu. B 1:9.
B. NATANS C. A. Meyer in Ledeb Fl Altaica 2:315 (1830). P 2:64.
B. NELSONII G 8:374. B 1:8, 2:426.
B. OBTUSIUSCULUS Raf in Desf J Bot 1:225 (1808) teste A. P. DC, syst 1:302. P 2:61.
B. OCCIDENTALIS P 4:15.
B. OCCIDENTALIS P 3:13, 14.
B. ORTHOXYNCHUS Hook Fl 1:21 t 9. B 2:426.
B. OVALIS Rafin, Desv J bot 4:268. P 2:61.
B. OXYNOTUS G 10:68. B 1:7.
B. PARVIFLORUS L. syst ed 10, 1087. (B 1:8 as hebecarpus as to var: in T & G Fl 1:25.)
B. POLITUS P 5:196.
B. POPULAGO P 3:14.
B. PURSHII Richards, Franklin 1 st J ed 2, app 23. Hook Fl 1:15 t 7. B 2:426 as multifidus.
B. REPENS L. sp pl 554. P 2:58 near Arcata, Cal. B 1:8.
B. REPTANS L. sp pl 549. B 1:6 as flammula var: r. = flammula fide IK.
B. RHOMBOLDEUS Goldie, Edinb Phil J 6:329 t 11 f 1. P 2:61 as ovalis Raf.
B. ROBINI Rafin, Fl Ludov 82. (1817). P 2:61 as obtusiusculus.
B. RUGULOSUS Greene.
 "Per, slender, apparently weak and decumbent or reclining, $1\frac{1}{2}$ -3" hi, nearly glab: lvs pinnately about 5-parted or divided, the divisions cleft or divided into lg linear or lanceolate seg: sep reflexed: pet 7-11, spatulate-oblg, $\frac{1}{2}$ lg: hd of ak slightly depressed-globose: ak rather few, barely 1" lg including the sh recurved sty, the sides faintly rugose-reticulate." P 2:58.
 Type locality: Chowchilla mts and near Visalia, Cal.
B. SAMOLIFOLIUS P 3:13.
B. SCLEPERATUS L. sp pl 551. B 2:426.
B. SUBSAGITTATUS P 2:59 based on Arizonicus.
 Variety **SUBSAGITTATUS** G. Ar.
B. TENELLUS Nutt. T & G Fl 1:23. B 1:8 as Nelsonii var: t.
B. TENUIPES M 1:50.
B. TRACHYSPTERMUS Ell sketch 2:65. B 1:7. = parviflorus fide IK.
B. TRICHOPHYLLUS Chaix Ab 155. A 1:150 s.
B. TRIPOLIATUS P 4:144. M 4:71.
B. CUSICKII P 3:14 s.
B. ILLINOENSIS P 5:195.
B. UNGUICULATUS P 4:142.
B. VICINALIS P 4:145.
RAPHANUS L. syst ed 1 (1735). A 1: 124 d.
R. RAPHEANISTRUM L. sp pl 669. B 1: 49. A 1:125 d.
R. SATIVUS L. sp pl 669. Eu. B 1:49. Ab 170. Da 2. Par 15. A 1:125 d.
REBOULEA Kunth, Rev. Gram 341 t 84 (1830). = Etonia fide IK.
R. GRACILIS Kunth, lc B 2:302 s. = E: obtusata fide IK.
RESADACEAE A 1:262 d.
RESADA L. syst ed 1 (1735). A 1:126 d.
R. ALBA L. sp pl 449. Eu. A 1:126 d.
R. LUTEA L. sp pl 449. Eu. Ab 182. A 1:

- R. GORATA** L. syst ed 10, 1046. B 1: 53. A 1:126 d.
RHACOMITRIUM Bridel. Moss.
R. ACICULARE Bridel. B 2:380.
R. CANESCENS Bridel. B 2:381.
R. DEPRESSUM Lesq. B 2:381.
R. HETEROSTICUM Bridel. B 2:381.
R. LAMUGINOSUM Bridel. B 2:381.
R. MICROCARPUM Bridel. B 2:381.
R. NEVIL B 2:381 (Grimmia Nevil, Muell, Fl 31:483, et T cl b 5:6). Ore.

Genus RHAMNUS Linnaeus.

Buckthorn: shrubs with alt lvs and sm g'ish perfect or polygamous fls in ax clusters; with 4 or 5 sh sep or teeth: pet very sm or 0; claws sh: sta 4 or 5; fl sh ova ovoid, free; sty sh, 3-4-cleft: fr berry-like, containing 2-4 separate sd-like nutlets of bony or cartilaginous texture.

- R. ALNIFOLIA** L'Herit. B 1:100. Parry Wyo 13.
R. ANONAEFOLIA P 3:16.
RHAMNUS CALIFORNICA Esch. Esch, st Pet ac mem 10:285 (1826). Br, Colo 228, 234. Ab 241. B 1:401, 2:439. Da 4. Z 1:240. Par 60.

Coffee Berry: shrub 4-15' hl, evergreen or decid lvs ob'lg, obtuse or acute, mostly 1½-2" lg; fls mostly perfect, 4-5-merous, on sh pedicels, in umbellate clusters peduncled: cx 2-2½" broad; its lobes triangular-lanceolate; pet minute, cuculate, deeply emarginate; fr a bk berry, globose or oval, 3-4" in diam.

Type locality: "in Novae Californiae fruticetis."

Variety **TOMENTELLA** Brewer & Watson, Ha 94. Coffee berry. Ab 242.

"Densely w-tomentose, especially on the lower side of the lvs."—B 1:101. So Cal; Ar: NM.

Rhamnus tomentellus Bth 303.
Frangula Californica. var. *tomentella* G, Pl Wright 2:28.

R. CAROLINIANA Walt, Fl Car 101. Z 1:241.

RHAMNUS CROCEA Nutt.

Evergreen glab shrub ½-6' hl: branches and branchlets slender, flexible, rather lg: lvs oft fascicled, rather narrowly elliptic, 1-4" lg, serrulate, g above, y'ish beneath, distinctly petioled but the petioles oft less than ½" lg: fls apetalous, mostly polygamous; sep and sta 4: fr 2 or 3" lg. r. Ar. Baja!

Type locality: "around Monterey California." Nutt, in T & G Fl 1:261 (1838). Ab 241. B 1:100. Da 4. Z 1:241. Br 1:225 (cites *insularis* as a synonym). Cur 1: 134 cites *ilicifolius* as a synonym. M 3:76, 115.

Variety **ILICIFOLIA** Greene.

Shrub, sometimes arborescent, branches scarcely spinescent: lvs g on both sides, oft 2.5 cm lg; fls oft 5-merous: fr somewhat larger than in type. LA Co.

Rhamnus ilicifolius. K 2:36. Er 1:12. B 1:101 S. Greene, Fl Fr 79 (1891). Ha 94. Ab 241. Da 4.

R. BETULAEPOLIA P 3:16.

R. ILICIFOLIA K 2:37. Cur 1:134 as *crocea*. Jepson, Er 1:12 (See *insularis*).
R. INSULARIS K 2:37. P 1:86 Mig; 201 Cedros, Cruz; 3:16.

Greene, Cal ac b 2:392:—"Tree oft 20' hi, the naked trunks 4-5' in diam, clothed with a smooth light gray bark: branches few and open; lvs oblong-oval, com 3' lg, including the ½ petiole, and 1½" broad, obtuse at both ends, mucronate at apex, the margin slightly but very regularly glandular-crenulate: color and texture of lf as in *R. crocea*; fr also the same except as to size, being much larger. The tree here spoken of, although receiving its best development on Santa Cruz, is well known in western Cal from Lake Co southward along the Mt Diablo range, and in hb specimens may, with some excuse be referred, as it long has been, to Nuttall's *R. crocea*; but no one in the field can confound the two. I saw the same on Cedros Island two years ago. Yet there is a little doubt about its being the plant described by the late Dr. Kellogg. But in view of their probable identity, I dare not propose a new name for what, if it be the same, has already two by the same author, the other one being *R. ilicifolia*."

R. LAURIFOLIUS Nutt, T & G Fl 1: 260. Z 1:243 s. = *Californica* fide IK.

R. LEUCODERMIS Z 1:241 S.

R. OCCIDENTALIS Howell, P 2:15. Z 1: 241 s.

R. FIRIFOLIA P 3:15.

A 1:30 fdr.

R. FURSEIANA DC 2:25. Par 62. B 1: 100, 2:439. P 3:16. Z 1:240.

R. RUERA P 1:68, 160 (fr compared with *Californica*): 2:14. Z 1:240 s.

Type locality: near Truckee, Cal.

R. SLEIPOLII Z 1:240 s. B 1:101 s.

R. SMITHI P 3:16.

RHAMNUS TOMENTELLA Benth.

Bth 303. Z 1:240 s. = *Californica* fide IK.

RHIZOGONIUM (Moss.)

R. ACANTHONEURON Muell, bot zeit 5:803. B 2:397 as *Mnium Menziesii*.

Genus **RHODODENDRON** Linnaeus.

R. ALBIFLORUM Hook Fl 2:43 t 33. B 2:458

R. CALENDULACEUM T, Fl U S 1:425. (H & A, bot Beech 362 = *occidentale* fide B 1:458.)

R. CALIFORNICUM Hook, bot mag t 4863. B 1:458. 2:461. Z 1:83, 215. Par 240.

RHODODENDRON OCCIDENTALE A G B 1:458. Par 88 t.

Genus **RHUS** Linnaeus.

Gen ed 1, 84 (1734). A 1:292 d.

RHUS AROMATICA Ait.

Hort Kew ed 1, 1:367. B 1:110. Par 160 S. A 1:304.

Variety **TEILOBATA** A. Gray.

A 1:304 d.

Diffusely slender branched.

R. CANADENSIS Marsh, Arb 123. Par 160. = *aromatica* fide IK.

RHUS DIVERSILOBA T. & G.

Fl 1:218. A 1:292 d. B 1:110. Ab 239. Da 4. Er Z 1:110 Cat. Par 8 t. P 1:87 Mig. Er 1:208 Rosa. Greene, Cal ac b 2:393 Cruz.

Poison oak: stems erect or climbing by rootlets.

RHUS GLABRA L, sp pl 265.

Greene, Er 1:21, 22.

RHUS INTEGRIFOLIA Nuttall.

B & H, Gen 1:419. Ab 239. Da 4. B 1:110. Br Z 1:111 Cat: Par 209. P 1:78, 87 Mig, 201 Cedros. Br 1:208 Rosa. Greene, Cal ac b 2:393 Cruz.

Low evergreen shrub 1-2 m hi, oft more or less depressed, with sh. stiff branches; lvs oval, rigid-coriaceous, very obtuse at both ends, or acutish at base, entire or sometimes serrate, 2.5-4 cm lg, dark g and shining above, veiny and paler beneath; petioles 5-8 mm lg; infl and young parts cinereous or canescently-puberulent; fls w or rose-p. glomerate; sessile, subtended by rather thick orbicular bracts within which are 2 similar but thinner bractlets; sep oval-orbicular, scarious-margined, ciliolate; drupes very viscid and acid, about 10 mm in diam.

RHUS LAURINA Nutt.

T & G, Fl 1:219. B 1:111. A 1:293 d. Par 209. P 1:201 Cedros. Ab 239. Br Z 1:108, 111 Cat. Da 4.

Leaves glaucous, entire: panicles 2-4 in. long. Shrub 8-15 ft. high.

R. LENTII K 2:16; Hesperian N 1859, f. Cur 1:134. P 1:201.

Type locality: Cedros Island, Baja.

Named in honor of William Lent.

R. LOBATA Hook. Fl 1:127 t 46. B 1:110 as *diversiloba*.

RHUS OVATA S. Watson.

Wat 20:358. A 1:93 fdr. Greene, Cal ac b 2:393 Cruz. Par 210. Ab 239. Da 4. Br 1:225.

Type locality: on hills and mts away from the coast, from SD to LA Co., etc. Baja! San Clemente Isl. Cat (W. S. Lyon). San Geronio Pass; a tree 20° hi, 2° in diam, shading 40° of ground!

R. TOXICODENDRON L. sp pl 266. B 1:110.

RHUS TRILOBATA Nuttall.

Nuttall, in T & G Fl 1:219 (1838).

Hall, U 93. Squaw bush.

Abrams, Fl LA 240.

Type locality: "in the central chain of the Rocky mts."

A 1:292 d. Da 4. B 1:110 S.

R. VEATCHIANA K 2:24. Hesperian Ap 1850, f. Cur 1:134 as *Veatchia* Cedrosensis.

Type locality: Cedros Island.

RHYNCHOSPORA Vahl.

R. ALBA Vahl. Eu. Ore. B 2:213.

RHYNCHOSTEGIUM Schimp. Moss.

R. RUSCIFORME Bruch & Schimp. B 2:415 as *Hypnum* r.

RIPES L. Gen ed 1. 68 (1737). A 1:321d. Greene, Cal ac b 1:83. M 1:63-103.

RIBES AMARUM McClatchie.

Ab 193. A 1:29 fdr.

R. AMICTUM P 1:69; 4:35. M 1:94, 95. Ha 84.

"Cinereous-tomentose or glabrate, branches not prickly, but with stout sh triple thorns at the nodes: lvs sm. 3-5-lobed: ped 1-fld. bracts solitary, cucullate, completely enwrapping ova, decid, its margin entire, in pubescent forms tomentose-ciliate, in other forms nearly naked: ex dark p. 4-6" lg, cylindrical-tubular with reflexed seg: fl subulate, scarcely exceeding the erose-dentate involute w pet; anth 1" lg, ovate, acute, tipped with a blunt or even truncate mucro: ova prickly. Interior valleys of

Humboldt Co, Cal, near Garberville, Miss Bush; also in Hoopa Valley, Mr. C. C. Marshall, 1887."—P 1:69 (1887).

R. ABEIDUM P 4:35.

R. AUREUM Pursh, Fl 1:164. B 1:207. M 3:75.

R. BALSAMIFERA K 2:94. Cur 1:136 as *cereum*.

R. BRACEOSUM P 3:71. M 4:14, 43, 47. B 1:206 s.

R. CALIFORNICUM H & A, bot Beech 346. B 1:205 as *Menziesii*.

R. CEREUM Dougl, Hort ac tr 7:512. A 1:321 fdr. B 1:207.

R. CEUVENTUM P 4:35.

R. DIVARICATUM Dougl, Hort sc tr 7:515. B 1:205. Ab 193. A 1:323 d. M 3:12.

R. FEROC Smith, in Rees Cyc 30: n 6. A 1:324 as *Menziesii*.

R. FRAGRANS Lodd, bot cab t 1533. B 1:208 as *aureum*.

R. GLUTINOSUM Bth, Hort sc tr, n sr, 1:476. Da 6. A 1:325 as *sanguineum* var. g. Par 220 t. M 3:99.

R. GREENEANUM M 1:111.

R. HALLII Jancz, ac Crac b (1906) 9. M 3:53 fdr.

RIBES HESPERIUM McClatchie.

Ab 194. A 1:30 fdr.

R. HIRTELUM Michx Fl 1:111. B 1:206 as *oxyacanthoides*.

R. HUDSONIANUM Richardson, Franklin 2d J app 6. B 1:206.

R. INDECORUM Eastw. A 1:332 fdr.

R. IRRIGUUM G, Am ac mem, ns, 4:53. =oxyacanthoides. (Dougl, Hort sc tr 7:515 et Wat, bot king 98 =divaricatum var: irriguum fide B 1:206.)

R. LACUSTRE Poir, Encyc Suppl 2:856. B 1:206. P 3:72.

Variety **LENTUM** Jones. A 1:323 as sp.

Variety **MOLLE** G. A 1:323 as *lentum*. Ha 84.

Synonymy: *Rnubigenum* McClatchie.

R. LAXIFLORUM Pursh, Fl 2:731. B 1:206.

R. LENTUM Cov & Rose. A 1:323 d.

Variety **VERIDIFOLIUM** Ab 193. A 1:323 fdr.

R. LEPTANTHEUM G, Am ac mem, ns, 4:53. B 1:205.

R. LOBBII G, Am nat 10:274. B 1:205. 2:445.

R. LONGIFLORUM Nutt. M 3:75.

R. MALVACEUM Smith, Rees Cycl 30: n 13. B 1:207. A 1:323 d. M 3:35.

Variety **VERIDIFOLIUM** Ab 192.

R. MARSHALLII P 1:31.

R. MENZIESII Pursh, Fl 2:732. B 1:204. Br 1:203 Cruz. Par 344. A 1:323 fdr.

R. MOLLE Howell non Poepp. A 1:323 as *lentum*.

RIBES MONTIGENUM McClatchie, Ery-A 1:29 d. 323 as *lentum*.

R. NEVADENSIS K 1:63 Cur 1:137 as *sanguineum*.

Variety **MALVACEUM**. Ab 193. A 1:324 fdr. M 4:28, 76.

R. RUBIGENUM McClatchie. A 1:29 fdr, 323 as *lentum*.

R. OCCIDENTALE H & A, bot Beech 346. M 1:133. B 1:205 as *Menziesii*. M 3:49.

R. OXYACANTHOIDES L. sp pl 201. B 1:206.

RIBES PALMERI Vasey & Rose.

Quintin (Palmer 741; Or); Santos!

- R. PARISHII** M 1:134.
R. PROSTRATUM L'Herit, Stirp Nov 3: t 2. B 1:206.
R. SANGUINEUM Pursh Fl 1:164. Da 6. B 1:207. A 1:324 fdr.
 Variety **GLUTINOSUM** G. B 1:207. A 1:325.
 Variety **MALVACEUM** G. Br 1:203 Cruz. A 1:225, 323 as sp.
 Variety **VARIEGATUM** Wat. A 1:324 as Nevadaense, 325.
R. SANTA LUCIAE Jancz, ac Crac b (1906) 9. M 3:53 fdr.
R. SAXOSUM Hook Fl 1:231. B 1:206 as oxyacanthoides.
R. SETOSUM Lindl, bot reg t 1237. B 1:206.
R. SPECIOSUM Pursh Fl 2:731. B 1:204. Da 6. Ab 194. Par 344 t. A 1:325 d.
R. STAMINEUM Smith, Rees Cycl 30: n 30. A 1:325 et B 1:204 as speciosum.
R. SUKSDORFII M 3:11, 52. Wash.
R. SUBVESTITUM H & A, bot Beech 346 (= Menziesii fide IK.) Da 5. M 1:133. Par 344. Greene, Cal ac b 2:397 Cruz? (Hook, bot mag t 4931 = Lobbiifide B 1:205.) M 3:70.
R. TENUIFLORUM Lindl, Hort sc tr 7:242. B 1:208. Da 6. Ab 192. A 1:325 d. = aureum fide IK et M 3:75.
R. VIBURNIFOLIUM G 17:202. A 1:325 fdr.
R. VICTORIS P 1:224.
 Type locality: Mt Tamalpais, Marin Co, Cal.
R. VILLOSUM Nutt, T & G Fl 1:547. B 1:206 s. A 1:322 as divaricatum.
R. VISCOSISSIMUM Pursh, Fl 1:163. B 1:207. A 1:326 fdr.
R. WOLFFII Rothrock, Am nat 8:358. B 1:207. A 1:325 as sanguineum variety variegatum.
R. LYCINELLA Muell Arg in Linnaea 34: 153. = Adelia fide IK.
R. MYRICAEFOLIA Muell, lc, 154. B 2:70 as Bernardia m.

Genus **RICINIS** Linnaeus.

- RICINIS** L. syst ed 1 (1735) A 1:282.
 A tall mon herb, oft persisting for several years and becoming a sm tree: lvs alt. large, peltate, palmately lobed and toothed: fls num, sm, apetalous, gish, in terminal racemes, the pist above the stam: pist fls with a 3-5 parted ex and num crowded sta; fil branched: stam fls with a caducous ex: ova 3-celled, 3-ovuled; sty 3, united at base, 2-cleft: cap subglobose or oval, smooth or spiny, separating into 3 2-valved carpels: sds ovoid or oblg, mottled.

RICINIS COMMUNIS Linn.

L sp Pl 1007.
 Davidon, Pl LA Co 16; Erythea 1:100, LA Co.

Parish, Zoe 1:124.
 Castor bean. Cruz; SBer; SD! San Gregorio, Baja (Br). Thoroughly naturalized.

Abrams, Fl LA 234.
 Castor bean; naturalized in the vicinity of SBar. and on Cruz (Greene).

Greene, Cal ac b 2:412.
 B 2:67. A 1:282.

RIDDELLIA Nutt, Am phil sc tr, ns, 7:371 (1841).

R. ARACHNOIDEA G, Am ac mem, ns, 4:94. B 1:372.

- E. COOPERI** G 7:358. B 1:373. Cal, Ut, Ar, Baja.
E. TAGETINA Nutt, lc. B 1:372.
EGIOFAPPUS G 6:548 (1865).
E. LEPTOCALADUS G, lc. Cal. B 1:387.
ROMANOFFIA Cha min Nees Hor Phys Berol 71 t 14 (1820).
E. CALIFORNICA P 5:39. Par 32
E. GLAUCA P 5:38.
E. LEIBERGII P 5:38.
E. MACOUNII P 5:37.
E. MENDOCINA P 5:40.
E. EUBELLA P 5:37.
E. SITCHENSIS Bong, mem ac Petersh 2:156 (1833). B 1:516. P 3:82, 5:36.
E. SPEEGULINA P 5:41.
E. SUKSDORFII P 5:38.
E. UNALASCENSIS Cham, lc, 72 t 14. P 5:35.

Genus **ROMNEYA** Harvey.

- A 1:93 d.
ROMNEYA COULTERI HARVEY.
 B 1:20, 2:248. Ab 160 Par 66 t. A 1:94 d.
ROMNEYA TRICHOCALYX Eastwood.
 Ab 160. Par 68. A 1:94 d.
ROMIPA Scop, Fl Carn ed 1, 520 (1760). = Nasturtium fide IK.
 Branching herbs: lvs simple or pinnate-lobed, dissected or rarely entire: fls w or y: sep spreading: sta oft less than 6: pods sh or elongated, terete or nearly so, sessile on receptacle; valves faintly 1-nerved or nerveless: sty sh or slender: sds turgid, minute, in 2 rows in each cell: cotyledons accumbent.
R. AMERICANA Britton, Torr cl mem 5:169. P 3:95 as Neobackia aquatica.
R. CUEVIFES P 3:97. Colo.
R. CUEVILILICA Bessey. Ab 172. A 1:120 as Nasturtium c.
R. LYBRATA Greene. M 3:75.
R. MULTICAULIS P 3:97 Cal.
R. NASTURTIUM Rusby. Ab 171. A 1:119 as Nasturtium officinale.
R. OCCIDENTALIS P 3:97 based on Nasturtium occidentale Greene.
R. TENERRIMA Greene, Er 3:46. P 3:96. Nev, Cal, Wash, Yellowstone.
R. TRACHECARPA P 3:96 based on Nasturtium trachycarpum G. Miss val-ley.

Genus **ROSA** Tournefort.

- Prickly shrubs with odd-pinnate lvs, adnate stipules and large solitary or corymbose fls: ex-tube globose or urceolate; its limb 5-parted; bractlets 0: pet 5, rounded, spreading: sta many on the silky disk, which lines the ex-tube: pistils many, included in the ex-tube, but free and distinct; sty subterminal; ovules solitary, pendulous: ak bony, berry-like ex-tube.
R. ARKANSANA Porter. P 4:13, 14 = blanda var.
R. ALDERSONI P 5:110, SD Co.
R. BLANDA Ait, Hort Kew ed 1, 2:202. B 1:187, 2:444. P 4:13. Ckl, W 5:11.
 Variety **ARKANSANA** Ckl, W 5:11.
ROSA CALIFORNICA C. & S.
 Linnaea 2:35. Par 240 Ab 203. Ha 88.
 Greene, Cal ac b 2:397 Cruz. Br 1:209 Rosa. Da 5. B 1:187. A 1:85 d.
 Variety **GLABRATA** Parish.
 A 1:85 fdr.
R. GYMNOCARPA Nutt, T & G, Fl 1:

461. B 1:187. Par 240.
R. MACOUNII P 4:10.
R. MANCA P 4:11.
R. MELINA P 4:10.
ROSA MINUTIFOLIA Engelm.
 Torr cl b 9:97. Wat 20:334, 338, 346. A
 1:93 d. Quintin! Rosarito!
R. NUTKANA Presl, Epim bot 203. B
 2:444.
R. PINETORUM M 1:53.
R. PISOCARPA G 8:332. B 1:87.
R. PRATINCOLA P 4:13.
R. SPITHAMEA G, B 2:444. = Californica fide IK.
R. SUFFULTA P 4:12.
R. ULTRAMONTANA M 1:107.
R. WOODSII P 4:11.
R. YAINACENSIS P 5:109.
ROTTBAELLIA L, f, Nov Gram Gen in
 Amoen Ac 10:22 (1779), partim.
R. PANICULATA Spreng, syst 1:300. B
 2:322 as Lepturus p.
 Genus **EOUBIEVA** Moq.

Per herb, glandular-pubescent, strong
 scented, prostrate and diffusely branched,
 with nar sm sh-petioled deeply pinnati-
 fied lvs: fls sm, g, perfect or pist, soli-
 tary or in sm axy clusters: ex urn-shap-
 ed, 3-5-toothed, in fr becoming ovoid,
 strongly reticulated: sta 5: sty 3, ex-
 serted: wall of pericarp thin, glandular:
 embryo a complete ring.
R. MULTIFIDA Moq. B 2:49. Ab 126.
 Parish, Er 6:87 LA Co (McClatchie).

Prostrate or ascending, very lfy, 1-4
 dm lg; lvs lanceolate to linear or linear-
 oblq, deeply pinnatifid into linear-oblq,
 acute, entire or toothed lobes; fls 1-6 in
 an axil, sessile, scarcely 1 mm broad,
 some perfect, some pist; fr'g ex 3-nerved
 and strongly reticulate-veined; utricle
 compressed. Pasadena
EUBACER.

R. VELUTINUM M 1:106.

Genus **RUBUS Linnaeus.**

- L, syst ed 1 (1735). A 1:316 d.
R. CHAMOEMORUS DC 2:565 (=stel-
 latus fide IK. P 3:74, 81. L sp pl 494.
R. GLAUCIFOLIUS K 1:67. Cur 1:136 et
 B 1:172 as leucodermis. A 1:316 s.
R. IDAEUS L, sp pl 492. Eu. B 1:172.
RUBUS LEUCODERMIS Douglas.
 Hook Fl 178. A 1:316 d.
 Abrams, Fl LA 198.—Occasional in all
 our mts in the pine belt. My-Je.
 Brewer & Watson, bot Cal 1:172. Ore;
 Baja!
 Wash; Ut; Ar.

- Torrey & Gray, Fl 1:454.
 Regel, Gartenfl, 19:353 to 379.
 Rubus glaucifolius Kellogg, Cal ac pr
 1:67.
R. MACROPETALUS Dougl, Hook Fl 1:
 178 t 59. B 1:173 as ursinus.
R. MENZIESII Hook Fl 1:179. B 1:172
 as spectabilis var: M.
R. NUTKANUS DC 2:566. B 1:171, 2:443.
 A 1:316 s. Br, Colo, 228.
R. OBOVATUS Pers, syn 2:52. B 1:172.
RUBUS PARVIFLORUS Nuttall.
 L, sp pl 1197. A 1:316 d. Ha 83. Par 24.
 Abrams, Fl LA 197. San Antonio mts.
 Nuttall, Gen 1:309 (1818).
 Type locality: "on the island of Mich-
 ilimackinac, lake Huron."
 Rubus Nutkanus Mocino, Seringe in
 DC Prodr 2:566 (1825).

Alk to Baja.

- R. PEDATUS** Smith, Fl Ic Ined t 63. B
 1:172.
R. SPECTABILIS Pursh Fl 1:348 t 16. B
 1:172, K Br, Z 1:83, 'Point Reyes, bears
 abundant fr of 2 colors, amber and dark
 red.' P 3:74. Par 26.
R. STRIGOSUS Michx, Fl 1:297. B 1:171.
RUBUS URSINUS C. & S.
 Linnaea 2:11. B 1:172. 2:443. Da 5. Br 1:
 209 Rosa. Greene, Cal ac b 2:396 Cruz.
 P 1:87 Princes Island. Baja! Ore.
R. VELUTINUS H & A bot Beech 140.
 M 1:106 s. B 1:172 as Nutkanus var: V.
R. VILLOSUM Ait, Hort Kew ed 1, 2:210.
 B 1:171.
RUBUS VITIFOLIUS C. & S.
 Cham & Schlecht, Linnaea 2:10 (1827).
 Abrams, Fl LA 198.—Frequent in the
 foothills and valleys, mostly along
 A 1:316 d. =ursinus fide IK.
RUDEBECKIA L, syst ed 1 (1735).
R. AMPECTENS P 4:177.
R. BICOLOR P 4:179, 180.
R. CALIFORNICA G 7:357. B 1:347.
R. DIVERGENS P 4:177.
R. FLAVA P 4:179.
R. FLEXUOSA P 4:180.
R. FLOIDIANA P 4:176.
R. HIBTA P 4:175.
R. LONGIFES P 4:178.
R. OCCIDENTALIS Nutt, Am phil se tr.
 ns, 7:355. B 1:347, 2:456.
R. SERICEA P 4:178.
R. TRUNCATA P 4:177.
RUPELLIA Plum ex L, syst, ed 1 (1735).
R. TUBEROSA L, sp pl 635. B 1:588.

Genus **RUMEX Linnaeus.**

- L, syst ed 1 (1735). A 1:210 d.
RUMEX ACETOSELLA Linn.
R. ALTISSIMUS P 4:234.
R. BEELANDIENSIS Meissn, DC 14:45. B
 2:9.
R. CONFINIS P 4:306.
R. CONGLOMERATUS Murr, Prod Fl
 Goett 52. Greene, Cal ac b 2:410 Cruz.
 Ab 121. B 2:9. A 1:211 d. Parish, Z 1:136.
 Santa Cruz Island (Greene).
 McClatchie, Erythea 2:78, Pasadena.
RUMEX CRISPUS Linn.
 Parish, Zoe 1:126.
 Greene, Cal ac b 2:410 Cruz. Ab 121. B
 2:9. Da 14. A 1:211 d.
 McClatchie, Erythea, 2:78, Cat.
 Davidson, Erythea 1:99, LA Co.
 Pacific Rural Press 38:511.
 L, Sp Pl 1:335 (1753). Eu.
 Coville, CNH 4:191.
 Europe; widely naturalized in Cal.
R. DENSIFLORUS P 4:305.
R. ELLIPTICUS P 4:234.
R. ENGELMANNI Ledeb, DC 14:64. B
 2:10 s.
R. FENESTRATUS P 4:306.
R. GRACILIPES P 4:304.
R. HESPERIUS P 4:234.
RUMEX HYMENOSEPALUS Torrey.
 T, Mex bound 177. B 2:8, 479. Da 7. Ab
 121.
 Coville, CNH 4:191.
 "Canaigre." Utah; N M; Cal; Quintin!
 The tubers rich in tannin; useful in curing
 sores on horses.
R. LONGIFOLIUS B 2:8 as occidentalis.
 occidentalis.

RUMEX MARITIMUS Linn.

L, sp pl 335. B 2:9. Da 14. P 1:92 Mig.
A 1:211 Greene, Cal ac b 2:410 Cruz.

Europe; Asia; Wash. to Mexico and the Atlantic; Cruz.

R. GIBBOSIFOLIUS L, sp pl 335. B 2:9.

R. OCCIDENTALIS P 4:305. B 2:8.

R. PAUCIFOLIUS Nutt, ex Wat, bot king 314. B 2:10.

RUMEX PERSICARIOIDES L.

L, sp pl 335. Ab 120. Jepson, Er 1:13. B 2:9 s. A 1:211 d. = *maritimus* fide IK.

R. POLYRHIZUS P 4:305.

R. PROCERA P 4:305. M 3:82.

RUMEX PULCHER L.

L, sp pl 336. B 2:40. A 1:212 d.

Abrams, LA 120. Sparingly introduced Inglewood.

RUMEX SALICIFOLIUS Wein.

DC 14:47. Da 14. B 2:8. Ab 120. P 1:92 Mig. Greene, Cal ac b 2:410 Cruz. Br 1:216 Rosa. A 1:212 d.

Weinm, Fl 1821 1:28 (1821). Cal.

Coville, El 1821 1:28 (1821). Cal.

A common weed from the Atlantic to the Pacific; Alaska to Mexico. Cruz; Rosa; Ha U 76.

R. SAXEI K, Pacific Rural Press 7 Je 1879. Cur 1:147 as *hymenosepalus*. B 2:479.

R. VENOSUS Pursh, Fl 2:733. B 2:8.

EUPALLEYA Moriere, in L sc Normand b 8:217 t 15. (1864). = *Stropholirion* fide IK.

R. VOLUBILIS Moriere, Linn sc de Nor b 1863. Cur 1:148 as *Brodiaea volubilis*. Genus **RUFFIA** Linnaeus.

Sts capillary, widely branched; lvs all submerged, very slender attenuate 1-nerved, with membranous sheaths at base; fls on a capillary spadix-like ped, naked, perfect, consisting of 2 sessile anth, 2-celled, attached by back to ped, having between them several pist fls with sessile peltate stig in 2 sets on opp sides of rachis, the whole at first enclosed in the sheathing base of lf; in development the ped elongates, bearing pist fls at the end; fertilization takes place at surface, after which the ped coils up; fr a sm obliquely pointed drupe, pedicelled.

RUPPIA MARITIMA Linn.

B 2:194. Da 17. Ab 11.

Sts 0.5—1 m lg; lvs 4-6 cm lg; sheaths membranous, 6-8 mm lg; ped 4-20 cm lg or more in fr; pedicels 1-3 cm lg at maturity; drupes with a hard shell, 2 mm lg, ovoid oblique or gibbous at base, pointed with the lg sty.

BUTOSMA G, gen ill 2:143 t 155 (1849). = *Thamnosma* fide IK.

R. TEXANUM G lc 144 t 155. B 1:97 as T: t.

EYDDEEGIA P 3:270.

R. GLABRATA P 3:270.

R. GRANDIFLORA P 3:270.

SABINA Hall in Rupp Fl Jen 336 (1745). = *Juniperus* fide IK.

S. OCCIDENTALIS Antoine, Cupress Gatt 54 t 85-6. M 1:47. = J: o.

S. MEGALOCARPA M 3:143 based on *Juniperus* m. NM.

SACCULARIA K 2:17.

S. VEATCHII K 2:17. Hesperian Jl 186, f. Cur 1:144 as *Antirrhinum junceum*.

SAGERETIA Brongn in Ann sc nat, sr

1, 10:359 t 13 f 2 (1827).

S. WRIGHTII Wat, 20:358. Tex, Baja.

Genus **SAGINA** Linnaeus.

L, syst ed 1 (1735). A 1:265 d.

S. CILIATA Fries, Liljel So Fl ed 3, 713. Eu. M 1:50.

S. LINMAEI G 8:378. B 1:70, 2:435. = *occidentalis* fide IK.

S. PROCUMBENS Bolander Cat 6 B 1:70 as *occidentalis*.

SAGINA OCCIDENTALIS S. Watson.

Wat 10:345. Greene, Cal ac b 2:392 Cruz. Br 1:208 Rosa. Da 3. B 1:70. Ab 146. A 1:26 d. Cat, SF, Wash.

Genus **SALICORNIA** Tournefort.

L, sp pl ed 1, 357 (1737). A 1:221 d.

SALICORNIA AMBIGUA Michx.

Michx, Fl 1:2 (1803).

Wat 9:125. Par 393. P 1:93 Mig. Br 1:204 Cruz, 216 Rosa. Ab 130. Da 15. B 2:57. A 1:221 d.

Coville, CNH 4:184. Near Bakersfield. Abrams, Fl LA 130. Very common in salt marshes along the coast. My-Ag.

Type locality: "in Carolinae sclipetis maritimis."

S. BIGELOWII T, Mex bound 184

S. FRUITICOSA L, sp pl ed 2. 5. Eu, Africa. B 2:57.

SALICORNIA HERBACEA Linn.

L, Sp Pl ed 2. 1:5 (1762). Eu.

Parish, Erythra 7:91, SD Co (Br).

Coville, CNH 4:184. About Tehachapi Lake.

B 2:57.

S. MUCRONATA Big, Fl Bost ed 3, 2. Parish, Er 7:91, SD. (Br). = *Bigelowii*

SALICORNIA SUBTERRANALIS Parish.

Ab 130. A 1:88 fdr.

SALFYGLOSSIS Ruiz & Pav. Prod 94 t 19 (1794).

S. PROSTRATA H & A bot Beech 153. B 1:546 as *Petunia parviflora*.

SALSOLA L. A 1:222 d.

S. DEPRESSA Pursh Fl 1:197. B 2:58 as *Suaeda* d. = *Suaeda plattensis* fide IK.

S. TRAGUS L, Cent pl 2:13. Ab 132. A 1:222 d.

Genus **SAGITTARIA** Linnaeus.

Per aquatic or marsh herbs with tuber-bearing or nodose rtstocks; lvs with nerves connected by num veinlets; scapes erect, decumbent or floating; fls mon or dioe, borne near the summit of the scapes in whorls of 3s, pedicelled, the stam com uppermost, whorls 3-bracted; perianth seg 6. outer 3 herbaceous persistent and reflexed or spreading in the pist fls; sta num, inserted on the convex receptacle; anth 2-celled, dehiscent by lateral slits; pist fls with num distinct 1-ovuled ova and sm persistent stig; ak densely aggregated in globose hds, compressed; sds curved; embryo horseshoe-shaped. Arrowhead

S. CALYCINA Da 18. A 1:89 as *Pophotocarpus californicus*.

S. CALYCINA E, bot Mex bound 212. Ab 17, as *Lophotocarpus* Cal.

CACTI.

The symmetry, beauty and diversity of forms which occur in this large family of American plants, have rendered the cacti favorite subjects of study to prince and pauper alike. With the exception of a few species of *Rhipsalis*, which extend to Africa, Mauritius and Ceylon, this family is exclusively American, though some species of *Nopalea* and *Opuntia* are now so thoroughly naturalized in certain parts of the Old World and in Africa, especially in the Mediterranean region, as to have all the appearance of being indigenous. Indeed some botanists incline to the opinion that some of the species may be really indigenous there, just as other families and genera are represented in the two continents by closely allied, though undoubtedly endemic, species.

Bentham and Hooker, recognized 13 genera; Karl Schumann, in his monograph, 21. Botanists usually accept about 1,000 species as valid, but this number may be greatly increased as they become more fully known. Schumann is credited with having expressed a belief in the existence of some 6,000 forms (doubtless including hybrids and minor varieties). Every species may be expected to produce a cristate or abnormal variety, and these have always received names whenever they reached European collections. Every species with magenta, purple or crimson flowers may be expected to produce an albino—and some of these have received names. Varieties major and minor, longispina and brevispina, albispina and nigrispina, have also added to the long lists of names before us. Many hybrid-cultures have received specific names, and I doubt not many natural hybrids, especially *Opuntias*, have received undue consideration.

The greater number of the names, with which the nomenclature is burdened, were applied to forms cultivated in European gardens and described by gardeners in horticultural periodicals; and a large number of them could not possibly be recognized as of value in a scientific revision of

the family. Many of the so-called species were founded upon single plants received in a dead state; and the descriptions are very incomplete, flowers and fruit often unknown to their authors, and frequently the native country was not named. Naturally the same species has often received from two to twenty or more names, and nomina nuda (names published without descriptions) are abundant.

Again, the number of names has been incredibly increased by the transfer of all the species published under one genus to another generic name, as when Otto Kuntze attempted to revive the Linnaean genus *Cactus* for *Mammillaria*, and when Schuman transferred *Anhalonium* to *Ariocarpus*, while similar action on a smaller scale has been taken by many authors.

Cacti find their greatest concentration in Mexico, rapidly decreasing in numbers northward, the extreme limit reached being about 50 degrees north latitude. In the West Indies the number of species is comparatively small; but they abound in some parts of tropical and subtropical South America, and a few occur in the temperate regions of Chili.

CULTIVATION OF CACTI.

Botanists generally recognize more than a thousand species of cacti, while of varieties, and natural and artificial hybrids, there is an unknown number.

These plants occur in nature under very diverse conditions; some in the moist temperate and torrid regions of North and South America; some in the dense, warm, humid forests of the tropics—often growing on the trees; others occur on the fertile temperate plains of Mexico; a great proportion, in point of individual plants, are found in the arid regions of the American continent, where they are compelled to maintain an existence sometimes for two or three years without a drop of rain; yet a few must be sought at high elevations, where rigorous winters must be endured.

The cacti of the Rocky Mountain region are widely advertised as hardy,

and used in rockeries and out-door plantings in the eastern United States and in Europe, but even they will not withstand a low temperature when abundantly supplied with water, but must be kept dry during the cold months. In California these plants have not seemed to enjoy themselves under the usual conditions.

The species which occur in Texas, New Mexico and Arizona, and in the Californian deserts are next in hardiness, but occurring as they do under diverse, and adverse conditions to most plant life, they do not all respond to the same treatment. The prickly pears will mostly thrive under any treatment that involves a moderate supply of water; the giant *Cereus* of the desert seems always thirsty for more water and will make a good use of an abundance—making rapid growth when planted in rich soil and not stinted for water. But the hermit cactus (*Echinocactus polyancistrus*) of the Mojave Desert region is seemingly impatient of a drop of water, and like many other desert species, soon dies in cultivation. I have been anxious to try these in our climate under glass without their being subject to ocean fog or winter rain, and I believe that they can be so grown without losing the brilliant colors of the spines which are so characteristic of them in their native haunts.

The cacti of the coast regions, both temperate and torrid, thrive under great heat, abundant moisture and in rich soil, as do most of the epiphytal species of the forests of Central and South America. These are classed as stove or greenhouse plants in the east and in Europe, but in Southern California it is usually sufficient to give them the shade of a lath house in a frostless situation. The *Phyllocacti*, *Ephyllums* and others, however, will do better under glass along with the *Euphorbias*—though many of these will make luxuriant growth in the open where good soil, good drainage, and a fair supply of water are furnished.

The climbing cacti are all natives of the tropics, but in Southern California thrive excellently where given a sunny exposure and abundant wa-

ter—though water should never touch the surface of the plant, especially in the heat of the sun—a safe, in fact an indispensable, rule with all cacti.

In planning a large cactus garden—intended to accommodate all known varieties—I laid the ground off in squares and triangles, allotting a separate square to each region. All the California varieties were to be grouped together—the cacti along with the *Yuccas*, *Agaves* and other succulents, together with plants especially characteristic of the flora of the section being grown together. The United States were thus to be represented by the California, the Arizona and the Texas squares, while the few species of Colorado and the Atlantic coast would be kept separate. Nearly all the Mexican states would be separately represented, the epiphytes going with those of Central and South America under lath. Other squares would be devoted to the South American republics as they become well represented, and to the spiny or succulent plants of Australia, Ceylon, South Africa, and other regions.

These squares were to be supplemented with lath and glass to provide for the needs of all the plants and there being an abundance of land, it was hoped that each species might be enabled to attain to its greatest development. Thus the giant *Cereus candelabrum*, with arms spreading fifty feet, would require room to grow in, that would not be accorded to an *Echinocactus* or a *Mammillaria*—which latter requires but a few inches of space. The fruit-bearing *Opuntias* also often attain wide proportions—clumps of our native species often being found fifty feet in diameter. A number of the *Cerei*—like the velvet cactus and the cord-wood cactus, also require abundant ground, more than usually accorded to them—while one species, *Cereus alamosensis*, of Sonora, while seldom more than a few feet high, yet naturally covers a diameter of a hundred feet—its arching branches reaching out and rooting at each approach to the earth.

Such a cactus garden could only thrive in Southern California in a sit-

uation practically frostless. The cactus fences of Mexico could be reproduced; the Mission hedge of tunas, as grown for their fruit in earlier days, and the climbing and hanging species should all be provided for, and after a few years of intelligent and persistent effort, no greater diversity of form, beauty and utility could be found in any garden in the world.

A popular fallacy is that all cacti have spines, and it is equally fallacious that all thrive under neglect or any treatment that may be given them. One gentleman purchased a choice collection of 500 varieties from me some years ago, and turned them over to a gardener, who set them out in the edge of a well-kept lawn! The gentleman is still said to remember me unkindly, though he could not have expected different results from such treatment of his plants. Another gentleman imported over 30,000 plants and turned them over to ignorant help—with the result, I am told, that only 4,000 survive after two years of mistreatment.

No class of plants will respond more freely with beauty, fruits and flowers than the cacti under intelligent and liberal treatment, and few will survive the neglect and abuse under which they will maintain an existence. One plant from the arid region of Mexico I kept from soil and water for a period of three years, and it is now growing and making up for lost time in my garden.

Fifty plants of *Echinocactus Johnsoni*, a rare species occurring in Southern Utah, although given every reasonable care, and supplied sparingly with water, all died in my garden in two or three months after transplanting. The rare *Cereus striatus* also all died before I could return from Mexico, after collecting them. But these could probably have been saved, by grafting onto hardier stock.

One dwarf species once sold in Europe for a thousand francs each—and even recently a fine plant of *Echinocactus Grusoni* has sold in England for \$250—and cheap at the price. These plants were equally sought by prince and slave, as today by the mil-

lionaire and the pauper. Prince Joseph de Salm-Dyck was one of the earliest admirers, and published a valuable work on the family. And scarce a home so humble in Mexico today that a few cannot be cultivated around the opening that serves for a door.

I am asked to give a few hints for a school garden of these grotesque plants. Liberal space should be allowed for the introduced tunas of Mexico, which readily grow from cuttings obtainable anywhere in Southern California, and which will quickly form formidable hedges. The native *Opuntias* and all others that can be obtained should next be given plenty of room according to the needs of each variety as far as known. The *Cerei* (if available) would require the next largest space. Last, but not least in interest would be the *Echinocacti* and dainty *Mammillarias* in endless grotesque or beautifully symmetrical forms, which would naturally be grouped together in a bed, as each would require but little room to grow in. A few inches of sand could profitably be used over the soil before planting these latter, and weeds should be eradicated before they gain a foothold. Plants other than cacti—like *Yuccas*, *Agaves* and *Aloes*, should be kept separate—the *Yuccas* given plenty of room to grow in, as much space as palms, while the *Agaves* and *Aloes* will often require much greater area at maturity than would be anticipated from the young plants, though a few species are always adapted to pot culture, and may be more easily cared for if not planted out in the open.

First learn as much as possible about each variety before planting, and the results will be more satisfactory. As there are now useful Gardening Dictionaries accessible in most public libraries, information of this character should not be neglected, nor ignorance given as an excuse for failure.

Native species should not be neglected, but given the greatest prominence, and the modest cactus garden may grow eventually into a genuine botanical garden.

PHYLLOCACTUS Link, Handb. 2:10 (1831). Stems flattened, jointed and notched; flowers from the sides, large, having slender long tubes and a regular arrangement of the petals. Profuse in flowering, with large showy blooms, from the richest crimsons and scarlets to the most delicate rose and blush tints, they are excelled in beauty by few decorative plants.

Epiphytal plants with spineless flattened leaf-like branches, with a prominent midrib, mostly with large showy flowers, from creamy white to the richest crimson and scarlet, produced from notches in the margins of the stems.

Readily produced by cuttings or seeds; the phyllocacti are established favorites, and hundreds of varieties have been produced by hybridization. Young growth often cylindrical, then triangular, finally assuming the flattened form.

P. Ackermanni Walpole, Rep. 2:341; et Salm-Dyck, H. D. ed. 2:55. Based on *Epiphyllum Ackermanni* Haworth, Bot. Reg. t. 1331;—*Cereus Ackermanni* Pfeiffer, Enum. 123; Bot. Mag. t. 3598. (5)

PHYLLOCACTUS ACUMINATUS KS.

State of Rio de Janeiro, Brazil.

P. acutifrons Hort. ex Salm-Dyck, HD ed. 1:37. Nomen nudum.

P. angularis Lemaire ex Labouret, Monog. Cact. 671. Nomen nudum.

P. Angulifer G. Don, in Loudon, Encyclop. Pl. Suppl. 2:1380. *P. anguliger* intended.

P. Anguliger Lemaire, Jard. Fleur. 1: t. 92 (1851). An extremely distinct plant, found by Hartweg in west Mexico, growing on trees, noted for its deeply angled, indented stems, the margins like a large saw with the teeth turned upward, forming blunt triangular lobes; flowers 3-5 inches in diameter, petals white, sepals narrow, orange or yellowish, and spreading, open in day light, with a powerful fragrance. (5)

P. biformis Labouret, Monog. Cact. 418. Based on *Disocactus biformis* Lindley, Bot. Reg. t. 9 (1845);—*Cereus biformis* Lindley, Bot. Reg. Misc. 66 (1843). *Disocactus biformis* Salm-Dyck, HD ed. 2:57. A rather graceful fleshy shrub, 3 feet high, branching freely, the stems flattened, leaf-like, reddish on the margin, bearing the flowers at the tips; petals narrow, 2-3 inches long, forming a pink tube; fruit bright red, half an inch long,

produced abundantly. (5).

Honduras, Central America.

P. caulorrhizus Lemaire, Jard. Fleur. 1, Misc. 6 (1851). Native country unknown. Stems oblong, compressed, subarticulate, glaucous-green.

P. crenatus Walpers, Rep. 5:320; Foerster, Handb. ed. 1:441. Honduras. Stems flat but only slightly crenated; flowers fragrant, 6-8 inches in diameter, with numerous lance-shaped pure white spreading petals, sepals tinged with purple. (5)

P. Hookeri Walpers, Rep. 2:341;—Salm-Dyck, HD ed. 2:55, 223. Based on *Cactus Phyllanthus*, Bot. Mag. t. 2692, not Linnaeus. Stems flat, slightly crenated, 2-3 feet high, with fragrant white flowers. Brazil, and Demerara, South America. Named in honor of Sir William Jackson Hooker, of London. Plant indistinguishable from *P. phyllanthus*; the numerous branches rather longer and larger, the notched margins becoming reddish-purple; flowers from July to September, open but a single night; ovary green, sometimes angular, covered with red scales; tube yellowish-green, almost naked; fruit oblong, 8-angled, purple, with a few greenish scales, furrowed near the umbilicus, flesh whitish, enclosing numerous smooth, reniform, black seeds. (5)

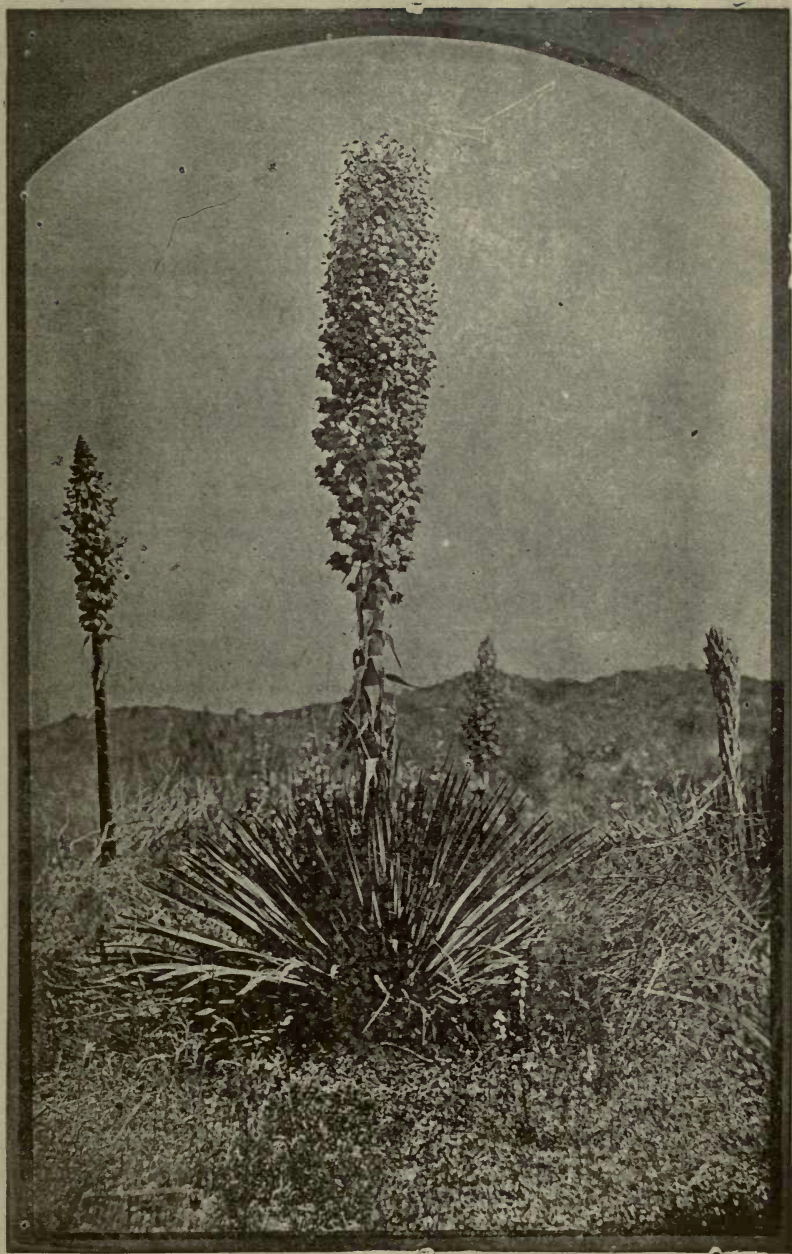
P. ignescens Hort. Dresd.—Warsz., AGZ 1843: 258, nomen nudum.—Haage, Cact. Verz. 1857: 10.—Native country unknown, and no description seen by the writer.

P. Jenkinsoni Hort. Angl., ex Haage, Cact. Verz. 1857: 10. A synonym of *P. phyllanthoides*

P. purpureus Hort. ex Haage, Cact. Verz. 27. Habitat? Nomen nudum?

P. Russellianus Salm-Dyck, HD. ed. 1:37. Brazil.

P. serratus Brongn., ex Labouret, Monog. Cact. 417:—"Tige et articles allongés, plats, crenelés; crenelures profondes. Quelquefois elle est triangulaire a la base, mais devenant plate un peu plus haut; areoles tres-petites, inserees au fond des crenelures, tres-legerement setuleuses d'abord, bientot tout a fait nues." Foerster, Handb. ed. 2: 839, cites this as a synonym of *P. anguliger*.



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